FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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Proposed Plans for USDA Sales Of Wheat for Feed Turned Down

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—The U.S. Department of Agriculture's trial balloon on plans to sell wheat for feed this crop year came to earth unceremoniously this week when USDA announced that it had turned down recommendations that substantial quantities of wheat be marketed in feed channels.

Feedstuffs two weeks ago exclusively forecast that USDA was contemplating a feed wheat program. This was revealed in conversations with top policy officials at USDA who were then and still are greatly concerned with the wheat surplus problem.

While the rejection of a feed wheat program seems final for this crop year, the USDA still leaves a wide open gate in its statement when it says, in part: "The decision not to initiate a subsidized feed wheat program at this time is in line with the provisions and intent of the controlling legislation." The key words are "at this time," leaving the door open to action at some later date.

Seriously Considered It

The important point, however, is that responsible top officials at USDA had seriously considered disposal of wheat for feed to relieve the increasingly difficult surplus condition for that crop.

Despite the USDA announcement, the end is not in sight.

As Congress investigates the gyrations of the stock markets, it is becoming increasingly clear that Congress senses a lag of the farm economy behind the rest of the nation. Senators on both sides of the chamber have noted a parallel between this time and the late 1920's, when the farm economy was slipping into the doldrums as the industrial plant was going at open throttle.

Notwithstanding the reports and denials of a feed wheat program, the very fact that USDA officials con-

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Fire Destroys Sargent Plant At Des Moines

DES MOINES, IOWA—Fire the night of March 6 destroyed a large section of Sargent & Co., Des Moines feed manufacturing plant. The west section of the plant, which comprised more than half of the two-story structure, as well as a wooden grain storage elevator burned. The offices and contents, which occupied the second floor of the burned section, were also lost.

Ernest I. Sargent, Jr., vice president of the firm, estimated damage at upwards of $500,000. He said the plant, which had been in 24-hour production, will be rebuilt. During the rebuilding period, Mr. Sargent said the firm's other four plants—at Algona, Iowa; Fremont, Neb.; Waverly, Mo., and Monmouth, Ill., will switch from an eight-hour schedule to 24-hour operation to handle requirements from customers. The Des Moines plant's capacity was estimated at close to 20 tons per hour.

The cause of the fire has not been determined. Fire department officials said they believe it smoldered for several hours before being discovered at 8:30 p.m. March 6. Ten fire companies, hampered by freezing weather and high winds, brought the blaze under control at 11 p.m.

Emergency offices for Sargent were established at VyLactos Laboratories, Inc., directly across the street from the Sargent plant, 1850 E. Euclid Ave. The VyLactos firm is owned by the Sargent company. Most of Sargent's office records were destroyed, the only ones saved being in a large safe which was not damaged by the fire.

Broilers Make Fast, Efficient Gains in Maryland Field Trial

COLLEGE PARK, MD.—Broilers grown in a recent University of Maryland field experiment averaged slightly over 3 lb. in weight at nine weeks of age, and required an average of only 2.37 lb. of feed per pound of live weight.

The experiment was conducted by the poultry department at the Maryland Agricultural Research Farm, Salisbury. Results of the trial were discussed recently at a field day held in the new broiler house at the farm.

Discussing the experiment with about 75 feed manufacturers and broiler producers were Wade Rice and James Nicholson, extension poultrymen, and Dr. Gerald F. Combs, nutrition specialist in the poultry department.

It was pointed out that the field trial with 8,000 broilers of both sexes was based upon several experiments which had been conducted earlier with smaller lots of birds at the University.

Dr. Combs compared results of the field test with earlier results. He stressed the fact that rations in the test at College Park are not recommended for commercial use now, but

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FEEDSTUFFS ANALYSIS TABLE

FEEDSTUFFS' 1955 Feed Analysis Table, copyright by Charles H. Hubbell, appears on pages 14-15 of this issue. Reprints of the table and of the notes that accompany it are available from FEEDSTUFFS, P. O. Box 67, Minneapolis 1, Minn. The price for single copies is 15¢. For orders of 3 to 5, the price is 10¢ each. Quantities of 10 or more may be obtained at a price of 5¢ each. Colleges and experiment stations will be furnished a reasonable number of reprints for their own use free of charge on request.

Allied Mills Plans New Feed Plant At Everson, Pa.

CHICAGO—Plans for a new feed manufacturing plant at Everson, Pa., have been announced by H. J. Buist, president of Allied Mills, Inc. It is scheduled for completion in the spring of 1956. The plant, with a daily capacity of 500 tons, will be

(Continued on page 73)

Announcement of Oilseed Support Plans Delayed

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—Widespread complaints from the soybean and cottonseed crushing industries halted the Commodity Credit Corp. from issuing its proposed price support announcement for the oilseed crops this week.

The CCC board of directors was said to have reached a final decision March 10, and this was to have been made public March 11. However, an overnight eruption from the crushing industries and their congressional representatives on Capitol Hill caused CCC to back away from announcing its previous plans.

It appeared late this week that some compromise must be forthcoming, or the issue was expected to drag well into next week, delaying

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Scenes of Destruction Remain After Disastrous Fire Destroys Greater Portion of Sargent & Co. Feed Plant at Des Moines

★ FEEDSTUFFS ★

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Anniversary Plans

IT used to be that a 25-year-old youngster was barely coming into man's estate, hoping that he soon could settle down and support a family. Today, the kids are raised on vitamins and antibiotics under improved supervision, and by the time they are in their teens they are over 6 feet tall and weigh 200 lb. They get married and raise families while they are still in college. By the time they are 25 they are veterans not only of the armed forces but of life.

Times sure have changed.

We are thinking along these lines because Feedstuffs is preparing to celebrate its 25th anniversary next May. Actually, it will be 26 years old at that time, as the first issue was published on May 18, 1929. The celebration was postponed because the parent company last spring was moving its presses and penates into a new plant and office building, and that project was about all it could handle.

Like the modern kids, Feedstuffs was nourished on vitamins and antibiotics, among other things, and it grew up rather fast. It would be difficult to imagine a more interesting, vital period in any industry than the past quarter century has been in the feed industry. Those 25 years were filled with miracles and near miracles in the field of animal and poultry nutrition. The developments have not yet ended, but the industry is approaching a maturity that will allow it to realize many of the potentials made possible by the formative years. It is a good time for celebration, which can include reminiscence, self-analysis, and a few thoughts concerning the future.

★ ★ ★

THE publishers of Feedstuffs are planning to devote most of the issue of May 21 to these subjects. The story of the major developments of the period will be told. Along with the serious central thread of this chronology, we will try to relate some of the anecdotes that come to mind, and which we hope will bring a sigh or a chuckle from an occasional old-timer.

It so happens that the May 21 issue will be current at the time of the American Feed Manufacturers Assn. convention, which will be held May 25-27 at the Morrison Hotel in Chicago. The Anniversary Number will be distributed to all of those attending the convention—in addition, of course, to the regular circulation. The Anniversary Number and its contents will fit in well, we believe, with the theme of this year's convention program, which is "The Challenge of Opportunity."

★ ★ ★

OUR anniversary project goes beyond rehashing our own past glories or those of the feed industry. The special and principal feature will be a 16-page section in the center of the paper, printed on enameled stock, which will contain a progress report to the American feeder. The contents will be devoted to the theme of what the feed industry has contributed to the growth and improvement of agriculture during this 25-year span.

It will aim to show from a viewpoint of someone outside the feed industry—a farmer or general layman—exactly how the feed industry's products have made farming easier, more productive and more profitable. The presentation will be partly through text, but as much as possible through graphic and forceful illustration.

The objective will be to produce something of value—of substantial and lasting economic merit—to the formula feed industry. The section, or reprints of it, will be designed for distribution by feed men to farmers, to Vo-Ag and other teachers, to bankers and other business men whose understanding of the feed man's role in agricultural prosperity is important. It will tell the story of results, of constant progress in productivity, efficiency and profitability.

Comparisons of feeds, methods and results of 25 years ago with those accepted as standard today are dramatic. When they are gathered into one presentation such as Feedstuffs is planning for May 21, the informative and educational impact is bound to be powerful and direct.

Our readers and advertisers will hear more about these plans for the 25th Anniversary number in the coming weeks. All of our staff is approaching the job with high enthusiasm, which we hope will be shared by the entire industry.

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

Indications of formula feeds business trends were not too clear-cut this week, with some areas reporting a falling off from the recently improved volume and other areas noting mixed reports of demand. Starter feed sales were improving, generally, but at a slower pace than usual for this time of the year. Throughout the trade a hesitation to buy beyond nearby needs was quite apparent. The index of wholesale feedstuffs prices dropped .5 point this week to 218.4, compared with 245.3 a year ago, and the feed grain index dropped 2.3 points to 209.9, compared with 220. (Ingredient market details on pages 74-76.)

Northwest

Formula feed demand continued to improve in the Northwest, with volume well above the low point reached in February but for the most part still somewhat behind last year's volume and normal seasonal expectations.

Sales of starter feeds continue to expand, although for some manufacturers at a slower rate than had been anticipated. This generally confirms earlier reports from hatcheries that the early season demand for replacement chicks has been lagging.

Pig starter feed sales also are starting to pick up, and some manufacturers noted an increase in hog feeds, although the latter demand certainly could not be attributed to higher prices for pork.

Dairy feed sales are still holding up well, with a tapering off not expected until possibly mid-April. Sales of beef cattle feeds also are holding steady.

While new shifts were not added to the bigger plants, larger production was achieved by extending the two shifts in operation somewhat. Good order backlogs are on hand for next week's run—up to three-days in some cases.

Southwest

Buying interest in feeds dropped off sharply this week in the Southwest. Most feed mills attributed the slump principally to a reaction from the fairly good sales of the past two weeks. Apparently many dealers filled their nearby needs during the past two weeks and consumer movement has not yet caught up with these stocks.

All types of feeds suffered in this week's decline, but the seasonal factors began to make a greater impression. Cattle feed shipments dropped off sharply, while chick starter movement improved relatively, as did pig starter and some milk replacement calf feeds.

The slump made it difficult for feed mills to get adequate running time this week. Most plants ran four days, some less than that, and many cut shifts. Price cards showed no change in most instances.

Northeast

Formula feed sales slipped a little last week and some mixers' operations edged lower.

One factor affecting the market is the shortage of chicks available to farmers. Farmers' interest has been whetted by increased broiler and egg prices, but because of reduced output hatcheries have been unable to supply all of the replacements that growers desire. Egg and broiler prices held firm last week, but some sources believe that prices will taper after the Lenten season.

Demand for dairy feeds held about steady.

There is quite a bit of dehydrated alfalfa meal with no guarantee of A content on the market at prices $12 @14 below the better grades. Brewers grains were off $1 ton, and some Canadian offerings were quoted $2@3 below domestic grains. Distillers grains were down $1 from a week ago. Soybean meal was off but later rallied $1@2. Cottonseed meal was down $2, but linseed oil held steady. Meat scraps and tankage were on the weak side.

Running time of formula feed manufacturers averaged 40 hours last week.

Millfeed demand and supply were about equal during the period. Bran was off $1 ton, but middlings held steady. Heavy feeds were steady to 50¢ lower on the bottom bracket. Buffalo prices, on a Boston basis, were competitive with other U.S. centers and Canada.

Southeast

Feed demand reports over the Southeast this week are conflicting. Some manufacturers report mills operating at or near capacity while others complain about the slow demand. The over-all picture shows only slightly better feeding, if improved at all.

The southeastern broiler market is still very strong, but the feeling is that the market has gone up too fast, and most producers are bracing for a downturn in the not too distant future. The late December and early January chick placements should begin to show in feed consumed during the current month, and this may spur demand for poultry feeds shortly. Many feed mixers continue to carry last month's bookings of ingredients into March, which clearly indicates how slow the feed situation has been in this area.

Demand for citrus products for dairy feeds has caused all producers to advance the price on both pulp and meal, and sales are still reported to be excellent. This condition seems to bear out the fact that there is heavy feeding of the cheaper ingredients wherever possible. Some producers are practically sold out of the estimated production.

Feed manufacturer purchasing agents are buying raw materials strictly as they are needed, and inventories are fairly low on most ingredients other than those which were contracted at the beginning of this feeding year. If general demand for the various formula feeds should come in all at once, higher prices for the feeder would be almost inevitable.

Ohio Valley

The continuing upward trend in egg prices and an upswing in chick placements on Ohio Valley farms during the last week have served to brighten the hopes of manufacturers for a more substantial improvement in business during coming weeks. A favorable reaction already has been noted in slightly increased sales of egg mashes and chick starters. Whether this uptrend will continue is uncertain at this time, but with business in the doldrums for so many months, it is only natural that any

(Continued on page 78)

Uncle Tom's Feed Fables Appear This Week on Page 68

Hemorrhaging in Broilers, Layers, Turkeys Prevented by KLOTOGEN F®

WATER-SOLUBLE OF VITAMIN K PROTECTS FLOCKS OF ALL AGES

When fatal hemorrhagic condition due to vitamin K deficiency strikes broiler, layer or turkey flocks, it can hit birds of any age, according to nutritional experts at Abbott Laboratories, North Chicago, Ill.

Cases of hemorrhagic condition have been reported among commercial flocks ranging in age from the first few days of life right through the growing period. The condition occurs without warning and can wipe out part of a flock in a few days.

Now, however, outbreaks of hemorrhagic condition due to vitamin K deficiency can be prevented by adding new KLOTOGEN F to poultry feeds. Known chemically as *menadione sodium bisulfite*, this synthetic form of vitamin K has been used medically for more than 14 years to maintain or restore normal blood clotting in *humans*.

JUST A TRACE of KLOTOGEN F *in the feed protects broilers, layers and turkeys against hemorrhaging due to vitamin K deficiency. As little as one gram per ton of finished feed protects against even unusual field stresses.*

WILL IT SURVIVE? This new arrival faces diseases, over-medication, debeaking, dubbing and other causes of hemorrhage or excessive bleeding all its life. KLOTOGEN F *in its feed can protect it.*

PROTECTS AGAINST FIELD STRESS

A highly active form of synthetic vitamin K, KLOTOGEN F provides maximum protection against vitamin K deficiency hemorrhage. Easy bleeding often occurs following stress of disease, over-medication, debeaking, dubbing, etc.

NEED FOR EXTRA VITAMIN K

Modern feed ingredient production methods sometimes reduce natural vitamin K content. Even with desirable natural sources of vitamin K, intestinal absorption may not be sufficient to offset many field stresses. Because the vitamin is not stored in the body, continuous supplies of vitamin K should be included in feeds as "insurance" against sudden hemorrhaging outbreaks.

KLOTOGEN F SUPERIOR FORM

Laboratory tests show that KLOTOGEN F has *six to 10 times* the vitamin K activity of ordinary menadione under stress conditions. The intestinal tracts of poultry absorb KLOTOGEN F more readily because of its water solubility—thus providing greater protection for even the most susceptible birds.

KLOTOGEN F is also the *safest* form of synthetic vitamin K for those handling it. And, per unit of activity, it is *less expensive* than plain menadione.

HEMORRHAGING WIDE SPREAD

Many commercial growers are reporting outbreaks of hemorrhagic condition in various areas of the country. While KLOTOGEN F cannot prevent hemorrhage due to *all* causes, nutritional research shows that it will prevent cases caused by vitamin K deficiency.

KLOTOGEN F is available to the feed industry either in pure, free-flowing powder form, or in a pre-mix. Each pound of the pre-mix contains 4 Gm. of KLOTOGEN F activity. Write today for additional information and prices.

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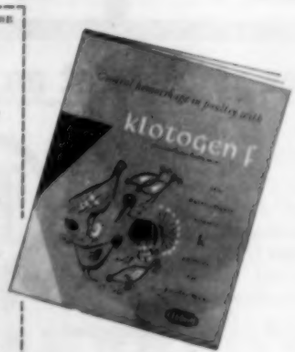

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Consumption of Feedstuffs Down in First Quarter of 1954-55 Season

WASHINGTON — Consumption of feedstuffs during the first three months of the 1954-55 season totaled 4.7 million tons, the smallest amount for the period since 1949, the U.S. Department of Agriculture reports.

The commercial feedstuffs in this total include oilseed meals, grain by-product feeds and other feed commodities.

The October-December, 1954, consumption total of 4,680,100 tons compares with 4,950,100 tons for the first three months of 1953-54, 5,065,000 tons in the same months of 1952-53 and 5,194,100 tons, the record, for the first three months of the 1951-52 feeding year.

Animal Units

USDA noted that the number of grain-consuming animal units to be fed during the 1954-55 season is estimated at 173 million. This compares with 167.6 million fed in 1953-54, 170.4 million in 1952-53 and 174.1 million in 1951-52.

On the basis of these numbers, 54.1 lb. of feed were fed per animal unit the first three months of this season, compared with 59.1 lb. last season, 59.5 lb. in 1952-53 and 59.7 lb. in the same months of 1951-52.

Consumption of oilseed meals for the first quarter of the season was the smallest since 1949 and amounted to 2,444,700 tons. This was 212,300 tons less than the same months last year and 413,400 tons below the record consumption for these months in 1951-52. Consumption of soybean meal at 1,388,900 tons was about the same as a year earlier, but 163,600 tons below the first quarter of 1951-52. Disappearance of cottonseed meal at 856,400 tons was 211,600 tons below the previous year while the use of linseed meal increased by about 10,000 tons to 142,000 tons. Consumption of copra meal was about unchanged, but supplies of peanut meal were less than half the previous year.

Exports of oilseed meals, principally soybean meal, increased sharply and totaled 186,808 tons the first three months of the season compared with 55,178 the same months a year earlier. Imports during these months totaled 22,439 this season as against 36,377 tons last season.

Consumption of grain by-products totaled 1,631,400 tons the first quar-

(Continued on page 77)

Average Returns To Hog Producers Indicated for 1955

WASHINGTON—The U.S. Department of Agriculture forecasts that the number of hogs slaughtered in 1955 will be about 10% above 1954. However, weights per hog are likely to average lighter, and production of pork may be about 8% greater.

Hog production is now on an increase, and the expected 1955 gain will come after a 13-year low in 1954.

Prices of hogs in 1955 will continue lower than last year, though by a smaller difference than in February, USDA said in its latest Livestock and Meat Situation report. For the year as a whole, prices will bear roughly an average relation to the price of corn, yielding about average returns to producers.

So far this year, USDA noted, price spreads between light and heavy hogs have been wider than in the same months of 1953 and 1954. The spread will continue wider than in those two years, when the supply of hogs was down, the price of lard was rising, and heavy hogs sold for almost as high a price as light hogs.

Supply Larger

The supply of hogs for slaughter this spring and summer will be above last year roughly in proportion to the 8% more farrowings in September-November last fall than a year before. According to farmers' intentions in December, 5% more pigs were planned for this spring than last spring. If those intentions are carried out, the supply of hogs for slaughter will be moderately greater this fall than last. The increase through November will be somewhat more than 5%, because a larger part of the spring pig crop will be marketed by that date this year than last. And, as noted above, for all of 1955, the number of hogs slaughtered will be about 10% above 1954.

In the first month and a half of 1955, the number of hogs slaughtered was up about 17% from a year earlier. The big increase came when a large supply of hogs carried over from the 1954 spring crop coincided with marketings from the large summer farrowings. Despite the increase over 1954, slaughter in January-February was no greater than in the same months of 1953.

Hog prices, however, were much lower than in 1953 or 1954. Various factors in this were cited, including packers' cold storage holdings and a heavier weight of hogs. Nevertheless, the hog price downturn proceeded faster than would have normally been expected.

This spring a general increase in prices of hogs is expected, and a seasonal high will be reached at midsummer. However, the recovery might be slow through April. The slaughter rate then will continue large because of a high proportion of the pig crop last fall that was born the first half of the season. The hog slaughter rate will subside in April and in the following months will drift nearer last year's level. By July it probably will be only a little above the slaughter of a year before.

SON ARRIVES

CHICAGO—Richard Ronald Glowe, 7 lb., 3.5 oz., was born March 5 at the Evanston Hospital to Mary Jayne and Richard R. Glowe. Mr. Glowe works for DCA, Inc., Chicago feed brokerage firm. Both mother and son are doing well, Mr. Glowe reports.

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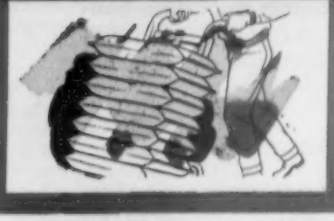

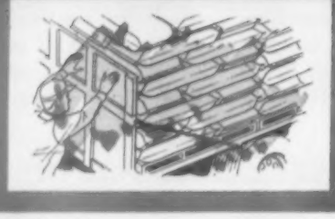

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Colorado Grain, Feed Men Examine 1955 Trade Outlook

DENVER — Despite the serious drouth which has plagued most of the state throughout 1954, a note of optimism flavored the 1955 convention of the Colorado Grain, Milling and Feed Dealers Assn., held here Feb. 20-23.

There were 350 members and associates on hand for the business sessions, when Ralph Booze, executive secretary, called the meeting to order.

First speaker was Dr. L. J. Padget, U.S. Department of Agriculture plant pest control branch director of Oakland, Cal., on "Khapra Beetle Control." Strides in control methods were outlined with specific examples of high mountain plateau application, and during the open forum which followed, Dr. Padget answered specific questions of dealers in beetle-infested areas of the state.

The association passed a resolution to endorse and support national efforts to control and eradicate the Khapra beetle. It reads: "Resolved, that this association and its members will observe and support all state and federal Khapra beetle quarantine regulations; that this association calls upon the state department of agriculture to make every effort to prevent an infested commodity shipment from coming into Colorado; that this association urges speedy passage by the general assembly of an appropriation of $20,000 to fight any Khapra beetle infestations. A measure for such appropriation is now before the assembly, and this association believes its enactment essential to protect Colorado agriculture."

Leslie Sheffield, secretary of the Nebraska Crop Improvement Assn., Omaha, compared the problems of Nebraska agriculture with those of Colorado, with emphasis on the drouth situation which has developed in both states.

This talk was followed by a panel discussion, with John Heitz as moderator, and presenting Mr. Sheffield, L. C. Pence, vice president of the Kansas Wheat Improvement Assn.; Rodney Tucker, Colorado extension agronomist; L. L. Yowell, Ovide grain dealer, and Marvin Lorensen, Colorado Milling & Elevator Co. cereal chemist.

Drouth Program

Walter C. Berger, associate administrator of the Commodity Stabilization Service, USDA, was a featured speaker at the convention, with a separate talk delivered at the annual presidents' luncheon, which brings together 50 presidents of grain and feed trade organizations from throughout the Mountain states area. His subject was "Price Support Policy and Operations," with a behind-the-scenes look at policy planning and its execution in terms of the association members.

He pointed out that the drouth feed program of his agency, which had expired Feb. 15, was under review. Issuance of feeder certificates has stopped temporarily, Mr. Berger said, with applicants eligible to secure a 60-day supply of feed, which will take care of feeders into April. Mr. Berger said that the extension requested by Colorado feeders may be authorized in the high mountain areas due to an expected late spring and a delay in available pasture.

Mr. Berger emphasized that the USDA fully recognizes the need for increased export of grain and grain products, but that it is extremely complex to increase such exports without upsetting the economies of cooperating foreign nations.

Mr. Berger said the USDA is reluctant to restrict acreage to any greater degree than at present, but he said unless a way is found to dispose of another 100 million bushels of wheat, the USDA will be required by law to cut supports drastically next year.

As for the export problem, Mr. Berger cited an example in which Holland raises a small wheat surplus and trades it to Norway for lumber. He pointed out that if the U.S. went into Norway with supplies of give-away wheat, the U.S. would ruin the lumber trade with Holland, and do neither country a favor.

In the case of the hungry countries,

(Continued on page 78)

Return of Sardines To California Coastal Waters Heralded

LOS ANGELES — The reappearance of sardines off the coast of southern California in 1954 is being heralded by the fish and fish meal industry. Approximately 67,000 tons of sardines—over 20 times that of the previous year—have been taken in southern California waters in the 1954-55 season.

Widespread and abundant sardine spawning off the California coast in the spring of 1954 is being attributed as the reason for the reappearance. It is estimated that more than 30 times as many eggs were spawned in 1954 than in the same area in 1953.

The sardine reappearance off southern California in 1954 was associated with an earlier warming of these waters than in 1952 and 1953. Whether a cause and effect relationship exists is unknown, but the occurrence of such contrasting conditions in 1953 and 1954 affords opportunity to test many hypotheses advanced about sardine movements.

CLOSE CALL—A carload of explosive black powder, just two cars away from the derailed section of a train that piled up near the Honeggers' & Co. plant at Fairbury, Ill., gave a menacing aspect to the wreck. However, other than giving employees a good scare, the wreck did not seriously affect operations at the plant. Railway wrecking crews said it was one of the worst scrambles they could recall.

D. H. McVey

Howard B. Herron

Howard B. Herron Heads Feed Sales For General Mills

MINNEAPOLIS—Howard B. Herron, former general sales manager for feed of the Sperry Division of General Mills, Inc., has been named director of sales of the company's feed division in Minneapolis, it was announced this week by D. H. McVey, general manager of the division.

Mr. Herron will be responsible for the sales, merchandising and advertising of the company's line of formula feeds. He succeeds C. B. Anderson, who is leaving the feed division.

"Mr. Herron, with his experience in both feed sales and grain buying, comes to Minneapolis exceptionally well qualified to handle his new assignment," Mr. McVey said in making the announcement.

Mr. Herron has served in various sales positions since joining General Mills 24 years ago. He has had about 15 years experience in formula feed activities, including not only sales duties but also six years as a grain buyer. Before becoming Sperry general sales manager for feed a year ago, he was general sales manager for general flour, Sperry Division, for nine years.

He will transfer his office from San Francisco to Minneapolis immediately.

Mr. McVey is the new general manager of the General Mills feed division, having been appointed to that post last week. (Feedstuffs, March 5.) He succeeds W. H. Eastman, who is retiring. Mr. McVey has been assistant general manager of the division since May, 1954. He has been with the company for 26 years.

Steady to Lower Feed Grain Prices Forecast by Kansas Economists

MANHATTAN, KANSAS—Steady to lower feed grain prices and lower wheat prices are in prospect for March, according to agricultural economists at Kansas State College.

In a monthly forecast appearing in the Kansas Agricultural Situation, the economists make these observations on the grain price outlook:

An adequate over-all supply of feed grains is available for the remainder of the feeding season ending Sept. 30. Uneven distribution of the available supply gives rise to a relatively higher price in the drouth area than is the usual situation.

Increased 1955 corn acreage allotments averaging about 8% above 1954 were recently announced by the U.S. Department of Agriculture. The 1954 allotment was designed to reduce acreage planted by 18% as compared to 1953. The continued expansion of livestock indicates further increases in utilization. The prospect for increased plantings, together with larger than expected stocks on Jan. 1, is expected to exert downward pressure on prices.

A near-record supply of 190 million bushels of grain sorghums was on hand on Jan. 1, 1955. Grain sorghums consistently have been underpriced when compared to the relative feeding value and the price of corn, especially where fed to dairy cows and fattening lambs. A continuation of this differential is expected during March.

Prices for oats, barley, and grain sorghums are expected to decline, influenced by the announcement of the lower price support rate for the 1955 crops. However, the market prices of these feed grains are related to the price of corn. As prices become lower relative to corn, the economic incentive is greater to substitute the lower cost feed for corn.

Wheat prices are dominated by the price support program and the management of the large supply owned by the government and under loan of the Commodity Credit Corp. Efforts to dispose of government stocks have not as yet greatly relieved the overall supply situation.

The supply of wheat not under price support or in government ownership appears to be somewhat below needs for the balance of the season. A recent USDA report indicates that only about 170 million bushels of free wheat are available. Needs for the comparable period ending on June 30, 1954, were about 200 millions. This would indicate a need for prices to be high enough to draw wheat from under the support program. In the past, it has taken a price 3@8¢ bu. above the loan rate to encourage farmers to sell wheat under loan. Loans on 1954 crop wheat mature on March 31, 1955, although farmers usually are given additional time to make delivery.

Some encouragement to sell farm-stored wheat may stem from renewed efforts of the grain sanitation program of the Food and Drug Administration. Infestation by insects or other contamination is a risk that is always present and is one of the costs of storage.

Ray S. Bass, A. E. Staley Company Official, Dies

DECATUR, ILL. — Ray S. Bass, treasurer and member of the board of directors of the A. E. Staley Manufacturing Co., Decatur, died March 8. He was 59 years old.

Mr. Bass also was a director of several insurance companies and a member of the board of managers and a trustee of Millikin University.

Egg-Feed Ratio Up Sharply; Broiler Figure Also Higher

WASHINGTON — Poultry feeding ratios improved in the month ending Feb. 15, with the egg-feed ratio showing the most significant gain—from the standpoint of profits for feeders and the outlook for better feed demand.

The egg-feed ratio stood at 10.4 in mid-February, compared with 8.5 in January. The relationship of feed costs to returns on sales of eggs, however, remained below the level of February, 1954, and average figures. (See table.)

The broiler-feed ratio in February advanced to 4.9 from 4.7 in January. It compared with 4.3 a year earlier.

The farm chicken - feed ratio also advanced, from 4.1 in January to 4.9 in February, but remained well below average figures. The turkey-feed ratio moved up from 6.9 in January to 7.4 in February. This compares with 8.6 a year ago.

The hog - corn ratio at 11.7 was lower in February than both the January level of 12.1 and the very high February, 1954, figure of 17.7.

Dairy feeding ratios showed little change, with the milk-feed ratio at 1.22, compared with 1.27 in January. The butterfat - feed ration held at the 19.6 figure recorded for January. This figure was well below average ratios, however.

These figures were provided by the U.S. Department of Agriculture in its monthly Agricultural Prices report. USDA also reported the following developments:

Led by sharp increases in prices of eggs and farm chickens the poultry and egg price index rose 17% during the month ending in mid-February to 190% of its 1910-14 average. Prices for commercial broilers and turkeys rose moderately during the month.

Notwithstanding the contraseasonal rise, mid-February egg prices were 14% below a year earlier. Farm chicken and turkey prices were also below a year earlier, although commercial broilers averaged 12% higher. The indext was 9% less than last February.

Although egg production was at record levels during the fall and early winter, the number of potential layers on farms on February 1 was about the same as a year earlier, but 4% below the 1944-53 average.

The index of dairy product prices declined seasonally during the month, and at 253 on Feb. 15, was 2% below a month earlier and 5% below a year earlier. Prices received for milk sold at wholesale to plants and dealers averaged $4.05 100 lb. in February. This was 14¢ less than in January and 16¢ less than in February, 1954. Prices received for butterfat in cream and for milk sold at retail in mid-February were unchanged from a month earlier.

Higher prices for beef cattle, calves, sheep, and lambs slightly more than offset lower prices for hogs to raise the index of prices received by farmers for meat animals as of mid-February 4% above mid-January. At 264 the index is 16% below a year earlier.

Feed prices averaged slightly lower in mid-February than a month earlier. The index declined 1 point during the month to 223, about 1% under a year ago. Small increases over January were registered in the prices for wheat millfeeds and in dairy feed. Prices for all oil meals declined somewhat, but the price of cottonseed meal remained substantially higher than in February, 1954, when government held stocks were being furnished in drouth areas.

Farm Commodity-Feed Price Ratio

	U.S.	New Eng.	Mid-Atl.	East North Cent.	West North Cent.	South Atl.	East South Cent.	West South Cent.	Mount.	Pac.
CHICKEN-FEED—										
Farm Chickens:										
February, 1955	4.9	5.0	5.6	4.9	4.2	4.8	4.5	4.3	4.0	4.1
January, 1955	4.1	3.9	4.6	4.2	3.8	4.4	4.1	3.9	3.8	3.0
February, 1954	5.6	5.1	6.0	5.9	5.2	5.3	5.3	5.3	5.2	4.5
Average (1944-53)	7.0									
Average (Feb., 1944-53)	7.3									
Broilers:										
February, 1955	4.9	5.4	5.7	5.0	4.9	4.7	4.3	4.8	5.1	4.8
January, 1955	4.7	5.1	5.2	4.7	4.3	4.9	4.2	4.3	4.9	4.6
February, 1954	4.3	4.5	5.0	4.7	4.5	4.0	4.3	4.3	5.5	4.6
TURKEY-FEED—										
February, 1955	7.4	7.8	8.9	8.1	8.5	7.3	8.0	6.5	6.9	5.5
January, 1955	6.9	7.8	8.6	8.1	8.1	6.8	7.8	6.5	6.6	5.4
February, 1954	8.6	8.6	10.1	9.6	9.4	8.3	8.7	7.4	8.0	6.9
Average (1944-53)	9.5									
Average (Feb., 1944-53)	9.8									
EGG-FEED—										
February, 1955	10.4	10.9	11.2	10.1	10.6	10.3	10.0	9.7	9.6	10.6
January, 1955	8.5	9.2	9.5	7.7	7.1	10.1	9.5	9.3	8.5	8.9
February, 1954	11.8	12.5	13.6	11.5	11.6	12.4	11.8	11.4	11.6	11.5
Average (1934-53)	12.1									
Average (Feb., 1934-53)	11.1									

	U.S.	North Atl.	East North Cent.	West North Cent.	South Atl.	South Cent.	West
MILK-FEED—							
February, 1955	1.22	1.21	1.14	1.23	1.45	1.36	1.28
January, 1955	1.27	1.26	1.19	1.27	1.48	1.42	1.32
February, 1954	1.22	1.18	1.17	1.25	1.46	1.36	1.26
Average (1934-53)	1.27						
Average (Feb., 1934-53)	1.31						
BUTTERFAT-FEED—							
February, 1955	19.6	...	17.9	21.4	...	14.1	17.1
January, 1955	19.6	...	17.9	21.3	...	14.1	17.2
February, 1954	21.3	...	19.9	23.0	...	15.8	18.4
Average (1934-53)	23.4						
Average (Feb., 1934-53)	24.1						

HOG-CORN:	U.S.	North Cent.
February, 1955	11.7	12.0
January, 1955	12.1	12.3
February, 1954	17.7	18.1
Average (1934-53)	12.8	13.6
Average (Feb., 1934-53)	13.3	14.3

NOTE: Ratios computed at mid-month by U.S. Department of Agriculture. Ratios represent number of pounds of poultry feed equal in value to 1 lb. live farm chicken, turkey or 1 doz. eggs; pounds broiler growing mash equal to 1 lb. broiler; pounds concentrate rations equal to 1 lb. milk or butterfat; bushels of corn equal to 100 lb. hog. Increases in ratios are favorable to the feeder.

KEY TO GEOGRAPHICAL DIVISIONS

Here is a guide to the states included in the geographical divisions listed in the accompanying commodity-feed price ratios:

New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.

Mid-Atlantic: New York, New Jersey, Pennsylvania.

North Atlantic: New England and Mid-Atlantic states combined.

East North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin.

West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

North Central: Combination of the two foregoing.

South Atlantic: Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.

East South Central: Kentucky, Tennessee, Alabama, Mississippi.

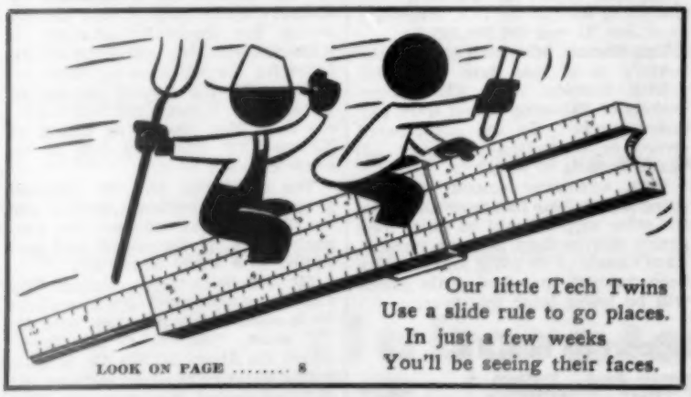
West South Central: Arkansas, Louisiana, Oklahoma, Texas.

South Central: Combination of the two above.

Mountain: Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada.

Pacific: Washington, Oregon, California.

West: Combination of the two above.



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LOOK ON PAGE 8

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FALCON BRAND PULVERIZED WHITE OATS
STANDARD BRAND PULVERIZED WHITE OATS
DAIRY BRAND COARSE GROUND OATS
STAR BRAND PULVERIZED MIXED FEED OATS
TRI-GRAIN PELLETS (Wheat - Corn - Oats)
ENERGEE PULVERIZED OATS
MIXERS' PULVERIZED OATS
MIXERS' COARSE GROUND WHITE OATS
MIXERS' PELLETED OATS
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OAT FEED (when available)
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Millers TO THE FEED TRADE

FRUEN MILLING COMPANY
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Bruce Varney

Dean Scholes

Loren V. Burns

FORM AGRI-TECH, INC.—Bruce Varney and Dean Scholes are president and vice president, respectively, of the newly organized Kansas City firm of Agri-Tech, Inc., and Loren V. Burns has joined the firm as technical director. The company will offer representation of a technical sales nature in the Midwest to manufacturers of products for the feed industry. The company will also market dehydrated alfalfa products on a nationwide scale. Agri-Tech, Inc., is representing American Cyanamid Co., Fine Chemicals Division, in these midwestern states: Colorado, Kansas, Nebraska, Iowa, Missouri, Illinois, Arkansas and Oklahoma.

Loren Burns Joins Agri-Tech, Inc., as Technical Director

KANSAS CITY — Bruce Varney, president of Agri-Tech, Inc., this week announced that Loren V. Burns, recently resigned head of the feed technology program at Kansas State College, will join Agri-Tech, Inc., as technical director. In addition Mr. Burns will be a stockholder and a director of the Agri-Tech organization, which will bring technical services and interpretative sales assistance to formula feed nutritionists and ingredient buyers in the Midwestern trade area.

Agri-Tech will represent a complete line of nationally prominent specialty and technical ingredients in Nebraska, Kansas, Colorado, Oklahoma, Arkansas, Missouri, Iowa and Illinois. Dehydrated alfalfa will be marketed on a nationwide basis.

Since 1952 until his recent resignation, Professor Burns has headed the feed technology curriculum at Kansas State College. He also has been active as a consultant in feed technology through Burns & Associates.

Mr. Burns entered the milling industry in 1929, working in a flour mill while in college. He joined the feed industry in 1939 as laboratory director for MFA Milling Co. From 1941 to 1945 he served as a commander in the Navy, where he was awarded a commendation for coordinating a major electronic equipment development program. In 1946 he returned to the MFA Milling Co. as technical director. In 1949, he joined Spear Mills of Kansas City as vice president and technical director. Burns & Associates was established in 1950.

Mr. Burns received his B.S. degree from Washburn University and an M.S. in chemistry (nutrition) from Kansas State College. He is a member of numerous professional societies, including the American Chemical Society, Poultry Science Assn., American Society for Animal Production, and the American Dairy Science Assn. He is a Rotarian and a member of Alpha Chi Sigma, national professional chemical fraternity.

Here come the twins
On their slide rule slide.
When they finally get here,
Won't you ask them inside?

LOOK ON PAGE 15

Amount of Corn Under Support Off; Other Feed Grains at Record Highs

WASHINGTON — The sharp increases in amounts of barley, oats and grain sorghums put under price support this crop year are revealed in the U.S. Department of Agriculture's latest report on price support activities.

Meanwhile, the amount of corn placed under loan continued to lag behind the comparable period a year earlier, while the amount of wheat under government control was at a huge total.

Through Feb. 15, a total of 130.9 million bushels of 1954-crop corn had been placed under price support, compared with 291.8 million bushels of 1953-crop corn through the same date a year earlier. As has been pointed out previously, a considerable part of the 1954 corn crop was ineligible for loan because of moisture content or failure of producers to comply with acreage allotments.

Record Highs

The quantities of 1954-crop barley, oats and grain sorghums put under support were at record highs. The amount of soybeans put under loan also was at a record high. Jan. 31 was the final date for placing all grain commodities but corn under 1954-crop price support. Producers have until May 31 to place 1954-crop corn under loan or purchase agreements.

The amount of 1954-crop barley placed under support was 114.2 million bushels, compared with 43 million bushels of 1953-crop barley put under support.

The oats support total was 73.8 million bushels, compared with 59.5 million bushels a year earlier. The grain sorghums total was 64.1 million cwt., compared with 25.7 million cwt.

The Jan. 31 final 1954-crop soybean total put under support was 41 million bushels, compared with 31.7 million bushels a year earlier. The flaxseed total was 9.8 million bushels, compared with 18.4 million bushels a year earlier.

Small Amounts Withdrawn

Comparatively small quantities of 1954 crop grains have been withdrawn from support.

Another report shows that the amount of corn in the CCC inventory as of Jan. 31 was 619,988,395 bu.

The amount of wheat in CCC inventory as of that date was 726.5 million bushels. Also, 425 million bushels of 1954-crop wheat were put under support. So the government owned or controlled well over 1.1 billion buhsels of wheat.

With a smaller amount of corn going under loan this year and with the price support level on other feed grains due to drop and the government re-sale price going lower, it has been forecast that feed grain prices will be lower later this year.

1954 Crops Under Support on Feb. 15

	Farm-stored loans	Warehouse-stored loans	Purchase agreements	Total
Corn, bu.	124,525,844	599,331	5,516,265	130,941,940
Barley, bu.	52,410,437	47,713,703	14,039,202	114,163,342
Flaxseed, bu.	3,496,026	3,719,359	2,760,814	9,876,189
Oats, bu.	50,584,909	13,124,148	10,118,787	73,827,844
Rye, bu.	3,871,836	2,160,649	1,165,942	7,198,427
Soybeans, bu.	18,694,794	18,870,992	3,465,165	41,030,951
Wheat, bu.	116,197,366	279,070,530	29,838,164	425,105,960
Dry edible beans, cwt.	57,559	3,421,160	497,314	3,976,033
Grain sorghums, cwt.	2,666,234	59,342,576	2,128,650	64,136,460
Rice, cwt.	3,284,349	9,254,653	12,902,037	30,441,044

Sprout-Waldron Purchases Dixie Machinery Firm

MUNCY, PA.—Sprout, Waldron & Co., Inc., Muncy, has purchased all of the capital stock of the Dixie Machinery Manufacturing Co., St. Louis, and has taken possession of the firm as of March 1, according to a joint announcement by J. William Schulze, vice president of Bath (Maine) Iron Works, and Harold M. Soars, president and general manager of Sprout-Waldron. The Dixie company has been a subsidiary of Bath Iron Works.

Mr. Soars said that Sprout-Waldron intends to continue the manufacturing operation of Dixie at St. Louis, with no contemplated changes in personnel. Eventually, he said, it is expected that the Dixie plant will be expanded to permit the manufacturing there of some Sprout-Waldron's own products destined for midwestern use. A complete stock of repair parts for both Dixie and Sprout-Waldron machines will be carried at St. Louis.

The Dixie Machinery Manufacturing Co. was founded in 1918, with its early products designed primarily for the rock crushing industry. Later, the company began promoting its machines in the feed industry, where its hammer mills are now well known.

In 1950, Bath Iron Works purchased as part of a diversification program, the Dixie company. Since that time Bath has operated Dixie as a wholly owned subsidiary. During that time, the Dixie line of feed grinding hammer mills was modernized and expanded under the direction of Walter Clement, formerly with the Bossert Co. of Utica, N.Y., longtime manufacturer of the JayBee line of hammer mills. The Dixie line now includes not only heavy duty units used by the larger feed mills, but also a quick screen change design for the custom grinder, officials pointed out.

Harold J. Alsted, vice president in charge of sales for Sprout-Waldron, said the acquisition of the Dixie company rounds out his firm's own line of hammer and attrition mills for feed grinding. He said that as fast as Dixie's existing distributorship contracts can be concluded, the sale and servicing of Dixie mills will be taken over by his organization, which now includes 30 men calling on the grain processing industry.

Staley Milling Co. Fetes Mayors Galore

KANSAS CITY—There were mayors all over the place when Thomas W. Staley, Staley Milling Co., entertained actor Thomas Mitchell, star of the television show "Mayor of the Town," at a luncheon in Kansas City recently. It was the day before the mayoralty election in Kansas City, Mo., and both candidates for the job were on hand, together with the current mayors of Kansas City, Kansas, and North Kansas City, Mo., the acting mayor of Kansas City, Mo., and two of his predecessors.

The candidates and Mr. Mitchell staged mock election speeches and the TV star was adjudged the winner, elected by the crowd, and presented with a key to the city.

Mr. Mitchell's visit to Kansas City was part of a personal appearance tour he is making in connection with his TV show, "Mayor of the Town" which the Staley Milling Co. is sponsoring on 14 midwestern stations. Mr. Mitchell visited the company's Kansas City plant and greeted dealers.

RETIRED FEED MAN DIES

LOWVILLE, N.Y.—Louis Bush, Sr., 86, retired Lowville feed merchant, died recently after an illness of five weeks. He is survived by five sons and two daughters.

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DAWE'S CHOLINE CHLORIDE 25%: A dry feed supplement containing 25% choline chloride in powdered cereal carrier. Particle size is ideal for thorough dispersion. It is completely free-flowing, non-sticky and handles well in either batch or continuous mixing operations.

Dawe's Choline Chloride also is available in 70% aqueous solution . . . water clear and non-corrosive . . . for those who prefer this concentration and are equipped to supplement their formulas with liquids.

Both forms are traditional Dawe's quality in potency, purity and uniformity. They are in ample supply to meet your year 'round requirements. Write today for sample and quotations.

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Stilbestrol Effective In Both Pellets, Meal, Lilly Officials State

INDIANAPOLIS — Test results just announced at Eli Lilly & Co. indicate that diethylstilbestrol is effective as an animal growth stimulant whether contained in pelleted feeds or in meal feeds.

Company officials said that in biological assays with standard strain mice, there has been no statistical difference in response of animals fed meal containing "Stilbosol" (Diethylstilbestrol Premix, Lilly) and those fed pellets made from the same meal. This standard biological assay, sensitive enough to detect 2 parts per billion, was earlier used to establish the absence of the hormone in meat of animals to which it was fed.

While pelleting doesn't alter the effectiveness of the hormone content, it has made assaying difficult, and an improved increment method is being used, it was revealed. This assay service, offered free to feed manufacturers, works like this:

A sample of pelleted feed containing "Stilbosol" is sent to Lilly analytical chemists. They add a known amount of hormone to a portion of the sample. Then they measure the hormone in the original sample and the fortified sample. From the relationship of these two sample portions, they determine the amount of hormone in the pellets.

The accuracy of the increment method has been established by biological tests, officials said.

FIRE STRIKES TWICE

WESTBROOK, MINN. — For the second time in 33 days fire destroyed a feed mill and elevator in this southwestern Minnesota community. A blaze that broke out at 4 a.m. March 8 destroyed the Westbrook Elevator Co. with an estimated loss of $60,000. Thirty-three days previously a similar fire burned the Kleven Elevator Co., located about 100 feet from the Westbrook Elevator Co. Ironically enough, Ed Kleven, who had lost his mill in the first fire, was dickering for the purchase of the Westbrook Elevator Co., owned by Fred Brandt, on the day before the fire.

Twin City Nutrition Seminar Topic Announced

MINNEAPOLIS — "Feeding the Microorganisms in the Rumen" will be the topic for the March 15 program of the Twin City Nutrition Seminar, announces Maxwell L. Cooley, General Mills, Inc., secretary of the group. The meeting will be at 8 p.m. in Peter's Hall, University of Minnesota farm school campus.

Dr. Frank Crane, Land O'Lakes, Inc., Minneapolis, will moderate the discussion and he will be assisted by Dr. Irving Belasco, E. I. du Pont de Nemours & Co., Inc., Bloomington, Del., and Dr. Phil Dzuik, dairy research assistant, University of Minnesota.

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(Tapeworms and Large Roundworms)

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(in Turkeys)

. . . and stimulate growth

(in both Chickens and Turkeys)

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POLYSTAT INCREASES RATE OF GROWTH — IS LOW IN COST — PAYS FOR ITSELF—Stimulates growth even with Vitamin B_{12} and antibiotics in the feed. Aids better development.

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Those who purchase products containing 3-Nitro from Dr. Salsbury's Laboratories are free to use them according to directions or incorporate them in products which are used to provide feed concentrations of 3-Nitro in the range cited, and avoid Section 271(b) of the patent statute — which states, "Whoever actively induces infringement of a patent shall be liable as an infringer."

FEEDSTUFFS

☆ 1955 FEEDSTUFFS ANALYSIS TABLE ☆

Copyright, 1955, by Charles H. Hubbell

This chart is published to assist feed manufacturers and students of nutrition in formulating feeds. The values given are not average, but carry a "margin of safety" so that the feed should contain at least as much protein, fat, minerals and vitamins, and not as much fiber as the final calculations show.

Protein %	Fat %	Fiber %	Calcium %	Phosphorus %	Ash %	FEEDSTUFF	Productive Energy, Calories Per lb.	Milligrams Per Lb.			
								Riboflavin	Niacin	Pantothenic Acid	Choline
20	2.5	18.0	1.70	.30	12.0	Alfalfa leaf meal (dehydrated)	300	8.00	20.0	17.0	500
20	2.5	18.0	1.70	.22	12.0	Alfalfa leaf meal (suncured)	300	7.00	19.0	16.0	500
17	2.0	25.0	1.50	.20	10.5	Alfalfa meal (dehydrated)	260	7.00	14.0	14.0	400
15	1.5	30.0	1.40	.20	9.2	Alfalfa meal (dehydrated)	240	7.00	12.0	12.0	400
13	1.5	33.0	1.20	.20	9.0	Alfalfa meal (either type)	230	5.00	9.0	10.0	300
11.5	2.0	6.0	.05	.30	3.0	Barley	800	0.70	24.0	3.0	400
9	2.0	6.0	.06	.30	2.5	Barley (Pacific Coast)	800	0.50	20.0	3.0	400
20	1.0	4.0	.10	.40	6.0	Beans (navy cull)	450	1.00	12.0	.5	...
8	0.5	20.0	.65	.05	3.6	Beet pulp, dried	220	0.30	8.0	.5	...
80	1.0	1.0	.30	.25	4.5	Blood meal	1,000	1.40	18.0	2.3	300
24	6.0	15.0	.20	.45	3.8	Brewers dried grains	...	.30	18.0	6.0	...
45	.5	2.0	.10	1.50	7.0	Brewers dried yeast	600	14.0	225.0	50.0	2,000
11	2.0	10.0	.04	.30	2.0	Buckwheat	700	0.20	20.0	...	...
32	5.0	0.0	1.30	1.00	10.0	Buttermilk, dried	700	12.00	7.5	19.0	500
6	2.5	15.0	2.00	.10	6.0	Citrus pulp, dried	420	1.00	9.0	6.0	...
20	6.0	11.0	.20	.60	7.0	Cocoanut oil meal (copra meal)	600	.60	13.0	3.0	500
8.4	3.8	2.5	.01	.25	1.3	Corn (yellow)	1,100	.50	9.0	2.4	200
7	3.0	8.0	.01	.25	1.4	Corn and cob meal (yellow)	...	...	...	...	...
2.3	1.0	30.0	..	..	1.5	Corn cobs	...	...	...	...	...
20.0	4.0	10.0	..	..	2.5	Corn germ meal	1,100	2.00	15.0	5.0	800
21.0	1.6	8.0	.30	.70	9.5	Corn gluten feed	550	1.20	30.0	4.0	500
41	1.5	4.0	.10	.40	4.5	Corn gluten meal	820	0.70	20.0	5.0	200
18.5	1.0	11.5	.08	.30	2.5	Corn oil meal (solvent)	840	2.00	19.0	1.5	...
36	4.0	16.0	.10	1.25	6.0	Cottonseed oil meal	580	1.80	20.0	6.5	1,200
41	4.0	13.0	.10	1.25	6.0	Cottonseed oil meal	620	1.80	20.0	6.5	1,200
41	1.5	13.0	.10	1.25	6.0	Cottonseed oil meal (solvent)	560	2.00	20.0	6.5	1,200
26	8.0	12.5	.09	.40	4.5	Distillers dried grains (light) (corn)	...	1.00	14.0	2.0	350
27	8.0	9.0	.25	1.00	6.0	Distillers dried grains, with solubles (corn)	...	3.00	30.0	5.0	1,000
28	6.0	3.0	.40	1.50	8.0	Distillers dried solubles (corn)	780	6.00	50.0	10.0	2,000
66	8.0	1.5	4.50	3.00	19.0	Fish meal, herring	900	2.00	...	...	2,200
60	9.0	1.0	5.00	3.20	20.0	Fish meal, menhaden	850	2.00	25.0	4.0	1,400
57	6.0	1.0	8.00	4.00	26.0	Fish meal, red fish	800	4.00	28.0	3.0	1,500
65	6.0	1.0	4.5	2.5	19.0	Fish meal, sardine	820	2.50	30.0	3.0	1,300
63	2.0	1.0	6.50	3.50	22.0	Fish meal, white	800	4.00	30.0	3.0	700
32	3.0	0.0	.10	.80	9.0	Fish solubles, 50% solids	420	6.00	120.0	18.0	1,000
10	5.0	6.0	.02	.55	3.0	Hominy feed (yellow)	850	1.00	20.0	4.5	460
11	2.5	2.5	.02	.30	1.5	Kafir corn	1,040	0.50	18.0	5.0	200
10	2.0	7.0	.07	.20	4.0	Kafir head chops	...	...	...	...	...
10	2.0	27.0	1.00	.20	8.0	Lespedeza hay meal	...	...	...	...	...
32	3.5	8.0	.35	.75	6.0	Linseed oil meal (old process)	500	1.70	15.0	5.0	800
34	0.5	8.0	.35	.75	6.0	Linseed oil meal (solvent)	480	1.70	15.0	5.0	800
24	1.5	15.0	.20	.70	7.0	Malt sprouts, dried	...	2.30	20.0	20.0	1,000
45	9.0	2.5	11.00	5.50	35.0	Meat and bone scraps	700	2.40	20.0	2.0	600
50	9.0	2.5	10.00	5.00	29.0	Meat and bone scraps	720	2.50	21.0	2.0	750
55	9.0	2.5	8.00	4.00	21.0	Meat scraps	740	2.60	23.0	2.0	850
11	2.5	2.5	.02	.33	2.5	Milo maize	1,080	0.40	13.0	4.0	220
10	2.0	7.0	.04	.20	4.0	Milo head chops	...	0.80	...	...	...
7	0.0	0.0	.05	.02	10.0	Molasses, beet	...	...	20.0	...	...
3	0.0	0.0	.50	.05	11.0	Molasses, cane	700	1.00	20.0	17.0	300
0.5	0.0	0.0	.50	.05	3.0	Molasses, corn (hydrol)	...	...	...	...	...
12	3.5	12.0	.10	.36	3.5	Oats	750	0.40	5.0	3.5	425
9	4.5	12.0	.10	.35	3.5	Oats (Pacific Coast)	750	...	...	...	...
15.5	4.5	2.5	.10	.45	2.0	Oats (hulled), oat groats	1,150	0.50	4.0	4.0	550
15.5	4.5	2.5	.10	.45	2.0	Oats, feeding rolled	1,150	0.50	4.0	4.0	550
2	.5	36.5	.09	.10	6.5	Oat hulls	0.0	...	...	...	...
3.5	1.0	34.0	.25	.20	6.0	Oat, mill by-product	...	0.72	4.6	1.5	200
48	6.0	7.0	.20	.55	5.5	Peanut oil meal (expeller)	840	2.40	77.5	24.0	800
50	1.0	7.0	.20	.55	5.5	Peanut oil meal (solvent)	760	2.40	77.5	24.0	800
14	.6	15.5	1.10	1.35	16.0	Rice bran (solvent)	710	1.40	129.0	10.5	...
11	10.0	4.0	.04	1.10	6.0	Rice polishings	930	0.90	325.0	4.5	460
12	1.7	2.5	.01	.30	2.0	Rye	800	0.70	7.0	4.0	...
40	7.0	6.5	2.00	1.50	12.0	Sesame oil meal	600	1.50	...	2.5	680
40	2.0	11.0	7.00	1.25	32.0	Shrimp meal	...	...	...	...	...
34	.5	0.0	1.30	1.00	8.0	Skim milk, dried	540	9.00	5.0	15.0	500
36	19.0	4.5	.25	.60	4.5	Soybeans	...	1.20	10.0	5.0	1,300
42	3.5	6.0	.20	.60	5.5	Soybean oil meal (expeller)	600	1.40	8.0	4.5	1,100
45	.5	6.5	.20	.65	5.5	Soybean oil meal (solvent)	550	1.30	9.0	5.5	1,200
50	.5	3.0	.20	.60	5.5	Soybean oil meal (solvent)	600	1.2	9.5	6.0	1,300
5	.8	4.0	.27	.25	..	Sweet potato meal (dehydrated)	...	0.95	11.8	...	...
60	8.0	3.0	6.00	3.00	22.5	Tankage	670	1.00	18.0	1.1	1,000
11.5	1.8	3.0	.05	.40	2.0	Wheat, hard	1,020	0.55	24.0	4.5	350
10	1.8	3.0	.05	.40	2.0	Wheat, soft western	1,000	0.53	26.0	4.5	300
14	3.5	11.0	.10	1.20	6.0	Wheat bran	410	1.00	65.0	12.0	460
16	3.5	6.5	.05	.70	5.0	Wheat, flour middlings, gray shorts	650	0.60	40.0	4.5	450
26	8.0	2.5	.01	1.00	4.5	Wheat, germ meal	780	2.20	23.5	3.5	1,500
15	3.5	9.0	.10	.90	5.0	Wheat, mixed feed	570	0.70	50.0	6.0	450
16	3.5	3.0	.10	.50	3.5	Wheat, red dog	1,000	0.45	25.0	6.0	450
15	3.5	8.0	.10	.90	5.5	Wheat, standard middlings, brown shorts	510	0.80	44.0	8.0	460
14	2.0	1.0	.05	.50	3.0	Wheat, flour second clears	950	0.45	25.0	6.0	450
12	.5	0.0	.80	.70	10.0	Whey, dried cheese	500	12.00	5.0	20.0	700

ANALYSIS OF MINERALS

	Calcium %	Phosphorus %
Bone meal, steamed	24	12.0
Bone meal, special steamed	26	13.0
Defluorinated super phosphate	31	13.0
Defluorinated rock phosphate	34	14.5
Defluorinated treble phosphate	30	18.0
Phosphate with colloidal clay	18	9.0
Curacao Island Phosphate	35	15.0
Di-calcium phosphate	26	18.0
Limestone, 98% ca. carb. and oyster shell flour	38	00.0

Use the figures guaranteed by the manufacturer. (Calculate ash as 100%.)

Notes on the Feedstuffs Analysis Table

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Feed Formulation

It is suggested that before any attempts are made in formulating feeds that the nutritive requirements for livestock and poultry as outlined in the pamphlets published by the National Research Council be thoroughly studied. Copies of these pamphlets may be obtained from the National Research Council, 2101 Constitution Ave., N.W., Washington 25, D.C.

For feeds that are to be fed with grain, be sure that informulation allowance is made for dilution of the ration with grain, and supply extra nutrients in the formula so that the total ration fed will supply the animals' nutritive requirements.

Productive Energy

The productive energy column included in the 1955 Feedstuffs Analysis Table gives the approximate values for poultry. Tables for swine and ruminants show quite different values and it is important that you use the proper table for the specific animal for which the feed is formulated. For example, the oat hull value is zero for poultry but for cattle or sheep oat hulls may contain an appreciable amount of energy.

Vitamin A—Carotene

Figures given below show carotene content of natural feedstuffs which contribute appreciable quantities of carotene to rations. The vitamin A activity which you can count on is derived from carotene and will therefore vary with the various animals fed. Poultry utilize carotene more efficiently than most 4-footed animals. In the vitamin A table below are the figures you can use in calculating the poultry rations. Do not use this table for 4-footed animals.

For 4-footed animals figure total mg. of carotene.

	Per Pound— mg. Carotene	Vit. A
Dehydrated alfalfa leaf meal, 20%	48	80,000
17% (100,000 A guar.)	60	100,000
17% (not guar.)	36	60,000
15% (not guar.)	24	40,000
13% (not guar.)	6	10,000
Yellow corn	6	1,000
Corn gluten feed	6	2,000
Corn gluten meal	6	10,000
Hominy feed	6	1,000

Corn, corn gluten feed and meal and hominy will generally contain more carotene than is shown in the table above, but much of this carotene may be in the form of carotenoids with little vitamin A activity so the figures above may be used in estimating the presence of vitamin A active carotene.

Alfalfa

Where dehydrated alfalfa meal has been used to supply a major portion of the vitamin A activity through its carotene content, it is important to know how much carotene is being supplied. A laboratory analysis should be made at the time the alfalfa is to be used.

Vitamin B_{12}

The range of active vitamin B_{12} present in natural feedstuffs is quite wide, and it is felt that it may be unwise to count too heavily on B_{12} contributions from natural feedstuffs unless the natural feedstuffs are guaranteed to furnish B_{12}. Feedstuffs in the table which contain appreciable Vitamin B_{12} are shown below.

Feedstuff	Range of B_{12} activity
Fish meal	.03-.15 milligrams/lb.
Fish solubles	.06-.28 milligrams/lb.
Meat and bone scrape	.01-.05 milligrams/lb.
Meat scrape	.01-.10 milligrams/lb.
Tankage	.02-.10 milligrams/lb.

Safety Factor

An allowance for losses in vitamin potency during the time the feeds are in transit and storage, whether in the manufacturer's plant, the dealer's warehouse, or the customer's feed room, should be considered. The fat soluble vitamins A and D are generally the least stable and extra high levels of these two vitamins should be incorporated in the feed formulas when losses are likely to be high. High losses are promoted by long storage time, high temperatures, high mineral content, and rancidity of ingredients. Consideration should be given to use of stabilized vitamins where these conditions prevail.

Other vitamins should be increased over and above those shown in the standard N.R.C. allowance tables where later research work shows increases are desirable. In some cases the vitamin content of certain ingredients used in your feed formulas may be poorly utilized or unavailable to the animals fed.

Quick Conversion Table for—Vitamin A

U.S.P. Units Per gram	Per lb.
600	272,400
1,000	454,000
2,000	908,000
3,000	1,362,000
4,000	1,816,000

Conversion Tables

1 pound=454 grams
1 ounce=28.4 grams
1 gram=1,000 milligrams
1 milligram=1,000 micrograms, also call gammas (γ).
1 microgram per gram equals 1 part per million.
.3 microgram of Vitamin A=1 unit of Vitamin A.
To convert milligrams per gram to milligrams per pound multiply by 454.
To convert micrograms per gram or per pound to milligrams per gram or per pound divide by 1,000.
To convert milligrams per pound to micrograms per gram or parts per million divide by .454 or multiply by 2.2.

Vitamins D_2 and D_3

Irradiated yeast or plant sterols provide Vitamin D_2 which is excellent for 4-footed animals but not suitable for poultry.

Vitamin D from irradiated animal sterols (D-activated animal sterol) or that from fish liver oils provides Vitamin D_3 which is suitable for both poultry and 4-footed animals.

Quick Conversion Table for—Vitamin D

A.O.A.C. Units— Per gram	Per lb.	Lb. per ton of feed	Am't of D per lb. of finished feed
25	11,350	19	366.6
100	45,400	14	363.2
200	90,800	8	363.2
250	113,500	6.4	363.2
400	181,600	4	362.2
800	362,200	2	363.2
1,000	454,000	1.6	363.2
2,000	908,000	0.8	363.2

Fats in Feeds

Many feed manufacturers will want to use fats or oils in feeds. While some types of fats and oils may contribute some fat soluble vitamins, it is safer to figure that fat and energy are all that is contributed by fats and oils. Digestibility of fats by poultry will vary quite widely. Fraps proposes a value of 2100 calories per pound be used in calculating the energy content of fat. Hill shows that the value may approach 2900 calories per pound in certain cases. These variations may possibly be explained by the different types of fats used and by variations in digestibility when used with different rations.

Be sure your fats are stabilized to prevent rancidity.

Amino Acids

In general the most efficient rations for non-ruminants contain a good balance of amino acids. Amino acids, unlike vitamins, are not stored in the body organs for future use. Thus the total ration ingested at one time must be well balanced from the amino acid standpoint. The total amino acid content of a ration may be calculated, but unfortunately this does not tell how much of each is nutritionally available to the animal. The calculations will show where deficiencies exist.

Acknowledgment

Data for the preparation of the Feedstuffs Analysis Table has been received from many laboratories throughout the country. To the chemists and research workers that have so graciously cooperated in supplying this information, we wish to express our sincere gratitude and thanks.

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LOOK ON PAGE 65

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All Phases of Animal Feeding Covered at Virginia Meeting

By HENRY S. FRENCH
Feedstuffs Editorial Staff

ROANOKE, VA. — Virtually every phase of animal nutrition — giving feed men a better insight into the latest developments in animal feeding—was covered at the Virginia Nutrition School held at the Hotel Roanoke here Feb. 23-24. Some 150 representatives of the feed industry attended.

The conference was sponsored by Virginia Polytechnic Institute, the Virginia State Feed Assn., Virginia State Department of Agriculture and the Nutrition Council of the American Feed Manufacturers Assn.

An all star lineup of speakers gave comprehensive reports for two full days, with a banquet occurring the evening of the first day.

According to Prof. Paul M. Reaves, VPI, Blacksburg, chairman of the nutrition school, each topic was designed to permit the persons attending to disseminate the information to the feeder in its best form. The research information was interpreted so that field men, salesmen, feed dealers and feed manufacturers could understand it and use it in formulating and manufacturing feed and in advising farmers in the wisest and most economical use of the feed.

Opening the two day session was a film entitled "The Rumen Story." Dr. N. H. Young, Director of the Virginia Agricultural Experiment Station, presided during the morning session.

Dr. W. D. Bell, associate director of the Virginia Agricultural Experiment Station, gave some of the highlights in animal science research at VPI. One of the accomplishments he listed was that preliminary results of the record of performance of beef cattle have shown that the weight gain of a calf from birth to weaning and the type score at weaning are a good indicator of future performance. This allows the breeders to estimate the value of the sire by the record of his calves.

Dr. Bell said another finding of significance, both to the beef producer and the peanut grower, is that peanut hulls can serve as a source of roughage in both fattening and growing rations for cattle. Fattening rations containing 40% peanut hulls produced the same results as the same rations containing 40% hay. A growing ration of which 60% were peanut hulls produced satisfactory results.

In another experiment, preliminary results indicate that forage produced in the spring is more digestible than forage of a similar appearance grown in August.

In further work, experiments are being conducted to study micro-nutrient elements, the use of chromic oxide as an indicator, indigestion trials, further study of the rumen, poultry breeding, use of infra-red lamps, and swine and poultry nutrition.

Nutrition Council

Dr. R. T. Parkhurst, Lindsey-Robinson & Co., Inc., who also is chairman of the Nutrition Council of the American Feed Manufacturers Assn., outlined the work of the Nutrition Council.

"Everyone who is interested in manufactured feeds should be interested in the work of the AFMA Nutrition Council," said Dr. Parkhurst. "Through the council the feed industry makes workable feeding programs for the most economical production of milk, meat and eggs out of the findings of a fundamental nature which come out of our state agricultural colleges and experiment stations and the federal experiment stations."

Dr. Parkhurst proceeded to outline the format of the council. There are 85 members, representing 67 feed manufacturers, 16 associate members, and 2 life members. Much of the work is carried on through committees. Of the 13 committees, three are administrative. The others have to do with education, encephalomalacia, ingredients, management survey, nutrition standards, publicity, quality control, research and marketing administration advisory, and research.

"While nutrient balance in practice generally is achieved because of our widely varied and abundant feed supplies," said Dr. R. W. Engel, head of the department of biochemistry and nutrition, VPI, "it nevertheless is important to apply modern nutrition knowledge judiciously in order to avoid rations that may not be properly balanced in all nutritional factors."

Dr. Engel listed several ways in which a nutritional imbalance can be accomplished. For example, there are several experiments, he said, which illustrate that an imbalance of one mineral in a ration can influence the requirement of another. As an example he noted that the potassium requirement is influenced by the sodium intake. He also told about an imbalance of calcium with other minerals. Recently, he added, it has been

(Continued on page 65)

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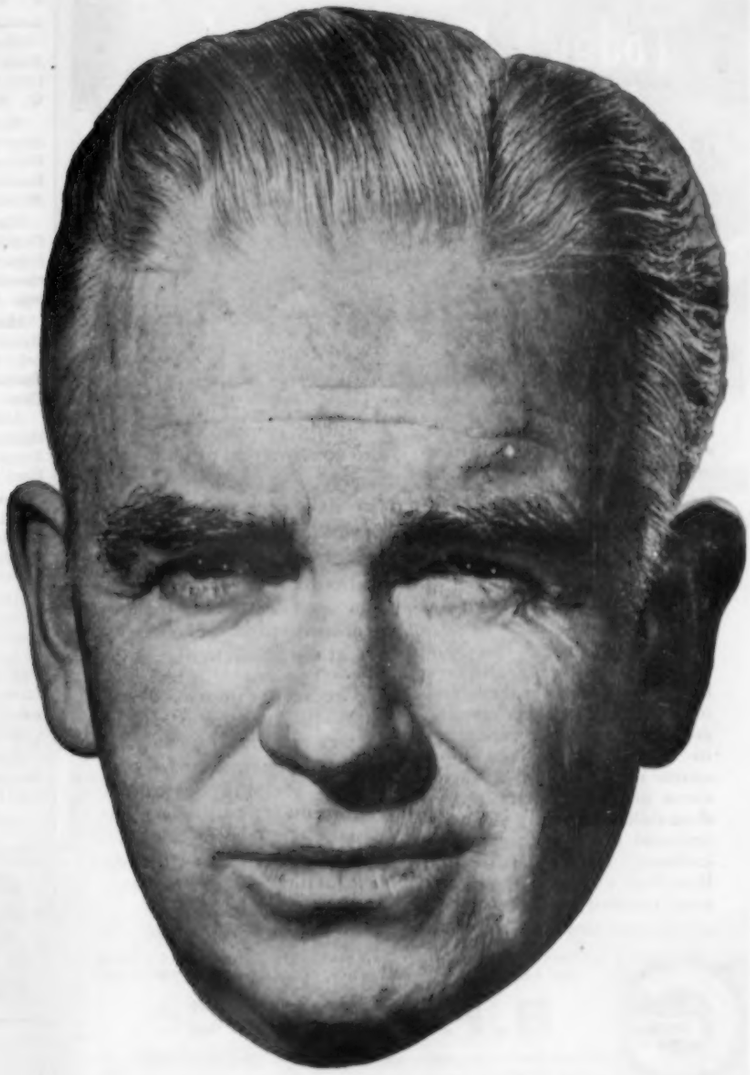

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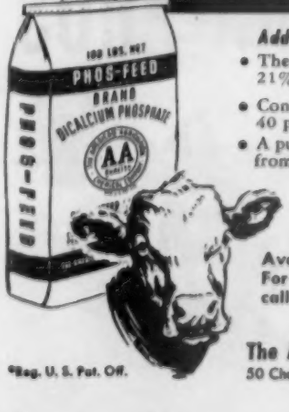

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- Contains LESS fluorine, less than .004% (less than 40 parts per million!)
- A pure, economical source of phosphorus, derived from 99.9% pure Elemental Phosphorus
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Available in 100-lb. bags or bulk (any quantity). For informative booklet, prices, and samples, call or write today.

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CONVENTION CALENDAR

March 14-16—Midwest Feed Mfrs. Assn.; Municipal Auditorium, Kansas City, Mo.; sec., Lloyd S. Larson, 20 W. 9th St., Kansas City.

March 14-16—National Feed Industry Show; Municipal Auditorium, Kansas City, Mo.; co-mgr., Eldon H. Roesler, 1712 West St. Paul Ave., Milwaukee.

Mar. 17-18 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Prof. G. L. Romoser, Poultry Dept., U. of Md., College Park, Md.

March 24-25—Oregon Feed & Seed Dealers Association; Multnomah Hotel, Portland, Ore.; Sec., Leon S. Jackson, 810 Lewis Bldg., Portland 4, Ore.

April 4-5—Texas Feed Mfrs. Assn.; Baker Hotel, Mineral Wells, Texas; Pres., Luther A. Pharr, Box 1200, Fort Worth, Texas.

April 4-6—American Association of Feed Microscopists; Melbourne Hotel, St. Louis, Mo.; Sec., Clarence Roelle, Kasco Mills, 2000 West Central Ave., Toledo 6, Ohio.

April 7—Ill. Swine Growers Day; U. of Ill., Urbana; chm., S. W. Terrill, Dept. of Animal Science.

April 17-20—American Oil Chemists Society; Roosevelt Hotel, New Orleans, La.; chmn., Carroll L. Hoffpauir, 2100 Robert E. Lee Blvd., New Orleans 19, La.

April 20—Illinois Nutrition Conference; U. of Ill., Urbana, Ill.; sec., Dr. H. M. Scott, U. of Ill.

April 21-23—California Hay, Grain & Feed Dealers Association; Fairmont Hotel, San Francisco, Cal.; chm., Terry Coonan, 1400 10th St., Sacramento 14, Cal.

April 22-23—Texas Grain and Feed Dealers Assn.; Baker Hotel, Dallas; Sec., Ben M. Ferguson, 614 Meacham Bldg., Fort Worth, Texas.

April 25-26—Nebraska Grain and Feed Dealers Assn.; Hotel Paxton, Omaha; Sec., Howard Elm, Trust Bldg., Lincoln, Neb.

Apr. 29 — Indiana Cattle Feeders Day; Purdue University, Lafayette; Sec., W. M. Beeson, Department of Animal Husbandry, School of Agriculture, Purdue University, Lafayette, Ind.

April 29-30 — Kansas Grain and Feed Dealers Assn.; Hotel Baker, Hutchinson; sec., O. E. Case, 901 Wiley Bldg., Hutchinson.

May 15-16 — Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

May 17-18—National Broiler Convention; Nacogdoches, Texas; chm., Howard Ferm, National Broiler Assn., 77 West Washington St., Chicago 2, Ill.

May 25-27—American Feed Manufacturers Assn.; Morrison Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

June 5-7—Indiana Grain and Feed Dealers Assn., Inc.; French Lick, Ind.; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4.

June 5-7—Georgia Feed & Poul-

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try Conference; Dinkler Plaza Hotel, Atlanta, Ga.; sec., Will L. Kinard, 208 William-Oliver Bldg., Atlanta 3, Ga.

June 6-7 — Central Retail Feed Assn., Inc.; Hotel Schroeder, Milwaukee; Sec., Eldon H. Roesler, 1712 West St. Paul Ave., Milwaukee 3, Wis.

June 12-15—Canadian Feed Manufacturers Assn., Champlain Convention; Chateau Frontenac, Quebec, Can.; J. St. Denis, Sec., Room 206, 20 Grey Nun St., Montreal, Canada.

June 17—Pacific Northwest Grain Dealers Assn., Inc.; Davenport Hotel, Spokane, Wash.; sec., Pete Stallcop, 418 Peyton Bldg., Spokane 1, Wash.

June 20-24 — Grain Elevator and Processing Superintendents; Winnipeg, Man., Can.; sec., Dean M. Clark, Board of Trade Bldg., Chicago.

June 22-24—Association of Southern Feed and Fertilizer Control Officials; Jung Hotel, New Orleans, La.; sec., Bruce Poundstone, Agricultural Experiment Station, Lexington 29, Ky.

June 23-25—Grain Processing Machinery Mfrs. Assn.; Northernaire, Three Lakes, Wis.; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

June 27-28—Eastern Federation of Feed Merchants, Inc.; Hotel Commodore, New York, N.Y.; sec., Austin W. Carpenter, Sherburne, N.Y.

July 10-12—Louisiana Poultry Improvement Assn.; Bentley Hotel, Alexandria; Sec., Clyde Ingram, Louisiana State University, Baton Rouge, La.

July 15-16—Kansas Seed Dealers Assn. mid-year convention; Hotel Broadview, Wichita; Sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

Aug. 15-16—Nutrition School for Feed Men; University of Wisconsin, Madison; chm., G. Bohstedt, Department of Animal Husbandry, U. of Wis., Madison 6, Wis.

Sept. 11-13—Grain and Feed Dealers National Assn.; Haddon Hall, Atlantic City, N.J.; Sec., John Bowden, 100 Merchants Exchange Bldg., St. Louis 2, Mo.

Sept. 22-23 — National Mineral Feeds Assn.; Bismarck Hotel, Chicago; Sec., Peter W. Janss, 212 Equitable Bldg., Des Moines, Ia.

Oct. 3-4—Pennsylvania Millers & Feed Dealers Assn.; Nittany Lion Inn, State College, Pa., sec., Richard I. Ammon, P.O. Box 329, Ephrata, Pa.

Oct. 6-7—Texas Nutrition Conference; Texas A&M College, College Station, Texas; Sec., J. R. Couch, Texas A&M, College Station, Texas.

Oct. 12-13—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., L. E. Bopst, Univ. of Maryland, College Park, Md.

Oct. 28—Illinois Sheep Production Day; University of Illinois, Urbana; Chmn., U.S. Garrigus, Dept. of Animal Science, U. of Ill., Urbana, Ill.

Nov. 6-8 — National Renderers Assn.; Bismarck Hotel, Chicago; Sec., John J. Hamel, Jr., 130 N. Wells Street, Chicago 6, Ill.

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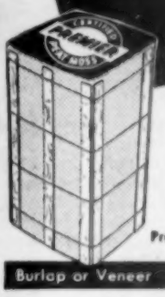
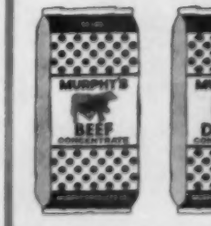


Poultrymen who try Premier keep buying it, because Premier is the *BIG value* litter that absorbs up to 20 times its own weight in moisture—*four* times as much as other material. It saves time, money and chicks. Sell Premier—from world-wide resources. Write for dealer helps and full details.

Premier Peat Moss Corp., 535 Fifth Ave., New York 17, N. Y.

Burlap or Veneer — Premier is the BIGGEST selling brand — All Plastic



"I like being a MURPHY dealer because MURPHY'S policy of not selling direct has helped me build a good feed business."

"The demand for MURPHY'S CONCENTRATES and MINERALS comes from all sizes and kinds of feeding operations. The fact that all MURPHY sales go through a dealer doesn't slow things up a bit. No sir, MURPHY'S CONCENTRATES and MURPHY'S MINERALS get the low cost job of feeding done for these feeders and they're not taking anything else. You can almost bet that when a farmer starts on MURPHY'S, he'll keep right on feeding MURPHY'S . . . that means plenty of *repeat* business.

"And as for new business, why between my MURPHY salesmen getting out in the field and the MURPHY mailings, radio and television and farm paper advertising, I'm pulling in a lot of new business. Believe me, the service MURPHY'S performs for a dealer cannot be beat."

M. J. Schlesinger
Mendota Farmer's Co-Op Supply Co.
Mendota, Illinois

Hard-selling radio commercials on records—the same recordings MURPHY'S *uses in their national advertising—are now offered to dealers for use on their own local radio stations. Musical, dramatic, and Lloyd Burlingham commercials are available. If you are interested in using these commercials to help boost your sales, write to Mr. Thomas C. Burchard, Vice President, Advertising, Murphy Products Company, Burlington, Wisconsin.*

MURPHY

PRODUCTS CO., BURLINGTON, WIS.

Telling a Good Sales Story

Carrying his briefcase containing some advertising materials, Joe Brooks walked down the street from his mill to the local newspaper plant, his leather jacket zippered tightly to keep out the winter wind.

In the lobby of the newspaper plant, he stomped the snow from his shoes and asked for E. Basil Tucker, the owner. The tall, lanky and easy mannered editor-owner smiled as he saw Joe. He and Joe had known each other for many years, had worked out many a promotion over the years and liked each other very much. This despite the fact that at one time, when she was a young newspaper reporter and new in Hansen's Creek, Tucker's wife, Lou, had had a crush on Joe Brooks which caused Joe's wife a little twinge of jealousy now and then.

"Basil," said Joe, as he sat down in the privacy of Tucker's office. "Due to the lower prices for farm products in the last year or so, the farmer is doing more grumbling than ever before. Isn't that true?"

The newspaper man nodded. "Yes, Joe. The efficient farmer is making money I am told, but the inefficient fellow is having a hard time at present prices, especially on milk and poultry."

A Full Page Ad

"Well, I've got an idea, Basil, that this is the time for me to run a full page ad on the progress that the dairy industry is making in increasing the consumption of milk, especially right here in Wisconsin."

"Yes, it's really surprising," Basil said, "especially the way the school pupils are responding to the subsidized milk program. When they grow up a lot of these youngsters will be heavy milk drinkers instead of heavy soft drink users. And that will be excellent for their health."

Joe smiled enthusiastically. "Exactly, Basil. Now I think a full page ad showing our farmers in this county that people are drinking more milk locally, will cheer them up, and show them that better days are ahead. Alone in his dairy barn the farmer sometimes forgets the progress that is being made."

"I was reading just the other day," Basil said philosophically, "that in one Wisconsin school where the children last year drank 2,250 pints of milk in one month, they this year drank 13,174 pints in a similar month. If the American people would increase their milk consumption only 10% of what these kids have done, it would result in a tremendous increase in health, longer life, and certainly more markets for farmers."

"Yeah, and look what Farmer Walter Schuett, Woodstock, Ill., did," Joe boasted. "The fellow who was selected by the American Farm Bureau Federation as doing the best all around job of dairying and promoting dairy products. Why, he got schools, clubs and individuals to use more milk and other dairy products regularly. He increased milk consumption terrifically in his county. Gee, if dairy farmers all over the nation did that, they would virtually lift themselves by their own bootstraps."

Merchandising

E. Basil Tucker nodded. "You bet they would, Joe. It has been proved that consistent, good American know-how merchandising can increase the use of dairy products, and every farmer and feed dealer and good citizen can join in the job."

"I'm glad you feel that way about it," Joe declared, "because my full page ad is going to be a pep sheet on the subject. I'm going to tell the farmers what's been done by all of us regularly to keep up the progress. Instead of a farmer sulking in his barn about low milk prices, I want him to feel encouraged enough to

CDP

CORONET DEFLUORINATED PHOSPHATE

rates *highest* in South Dakota turkey poult diet performance

An approved report of the South Dakota Agricultural Experiment Station (Journal Series No. 312) rates Defluorinated Phosphate B (CDP) in first place among 15 phosphorus supplements tested.

The South Dakota investigators ran five experiments to determine the availability of phosphorus from various sources in feeding Beltsville White turkey poults from day-old to four weeks of age. The phosphorus level of the basal diet was approximately .06 percent, thus requiring the poult to obtain the major portion of his phosphorus requirements from the phosphorus supplement.

Results were measured in weights per poult, bone ash percentages and mortality. Table 5, reproduced below, shows the combined ratings of all 15 phosphorus supplements. Defluorinated phosphate B is CDP.

Rating of the phosphorus supplements used with respect to body weight, bone ash and mortality when dibasic calcium phosphate is set equal to 100 and when these supplements supplied 0.8 percent levels of phosphorus to the poult diet.

Dibasic calcium phosphate U.S.P. XIV	100
Defluorinated phosphate B	101
Monobasic calcium phosphate	97
Defluorinated phosphate C	94
Defluorinated phosphate A	75
Tribasic calcium phosphate N.F. IX	73
Steamed bone meal	75
Beta tricalcium phosphate	60
Commercial dicalcium phosphate No. 2	66
Commercial dicalcium phosphate No. 1	63
Imported rock phosphate A	0
Imported rock phosphate B	0
Colloidal phosphate No. 1	0
Colloidal phosphate No. 2	0
Colloidal phosphate No. 3	0

The South Dakota investigators chose 0.8 percent level of phosphorus because this level was below optimum growth requirement and would provide a more critical assay of the availability of the phosphorus sources.

The South Dakota report summary (in part) reads:

"Poults appear to be more sensitive to source or composition of phosphates than do chicks and this is attributed in part to the difference in growth rates."

"Considerable variation in performance was noted between defluorinated phosphates used and between the dicalcium phosphates which may result from the original source of the material or the processing of the phosphate, or both."

Your request will bring a copy by return mail of the complete South Dakota report covering the above trials.

This Report appeared in Poultry Science Volume XXXIII, No. 5

Coronet Phosphate Company

A DIVISION OF SMITH-DOUGLASS COMPANY, INCORPORATED • NORFOLK 1, VIRGINIA

Hunting sales ?

Bemis packaging will help you

Use Bemilin Dress Prints • Cotton Sheeting Bags • Multiwall Paper Bags • Burlap Bags • Waterproof Bags • Bemis Special Thread

Bemis

BEMIS BAG COMPANY

Your chicks now have a better chance to live than they did twenty years ago, thanks to creative processing. Feed manufacturers like Nutrena (Cargill's feed division) have followed up feeding discoveries made at agricultural colleges and experiment stations. Nutrena is a creative processor because they found ways to put these discoveries to work in your poultry feeds. During the past 20 years new feeding discoveries have helped increase chick livability. Today you often see reports on individual flocks with as high as 97% to 100% livability. The difference is vitamin D, vitamin A, crumblizing, APF, antibiotics, coccidiosis control—none of which were in chick feed twenty years ago. The creative processor (like Nutrena) supplies the heavy mixing machinery, the know-how, the scientific control of powerful ingredients. Without the processor, it might have been a long time before these chick feed improvements got out of the laboratory and into the feed on your farm.

Chicks grow faster and safer, your linoleum floor wears longer

than 20 years ago—thanks to Cargill Creative Processing

Your kitchen floor is probably covered by a farm-grown product. Much of the linseed oil made by creative processing at Cargill's linseed oil plants eventually ends up in the manufacture of the best grades of linoleum. So kitchen linoleum really means a better price and better market for the flaxseed farmer.

Creative processing works two ways to make life better on American farms.

When a processor (like Cargill) takes certain grains and proteins and vitamins and minerals and even drugs—puts them all together in the right combination—and comes up with a feed that helps your chicks grow fast and safe—*that's creative processing* . . . to give you a better product for your farm.

When a processor (like Cargill) starts with a carload of flaxseed and ends up with an improved, processed linseed oil that makes possible a superior grade of linoleum—*that's creative processing* . . . to give you a better market for your farm products.

So the creative processor is a good man to have around. He is constantly hunting for new ways to use up your farm products, or ways to make better products for use on your farm.

Every time that he finds a new use for a farm product, he helps farm prices just that much. Creative processing now "eats up" over three-quarters of all farm products.

Every time the creative processor improves a product you are using, he makes your life better or your farming more profitable. Those are the aims of Cargill Creative Processing.

Well over 75% of all farm products must be processed in some way before they can be eaten or used—before they end up on the shelf in a grocery or hardware store. Cargill is both a creative processor and also, through its grain marketing division, helps sell and ship midwestern grain crops to other processors all over the world.

CARGILL, Creative Processors of Farm Products

Processing and Grain Marketing Offices in Minneapolis and 35 other cities

Cargill CREATIVE PROCESSING

This is how Cargill is telling the importance of processing and processors to farmer-readers of papers like The Farmer, Wallaces' Farmer, Dakota Farmer, etc.

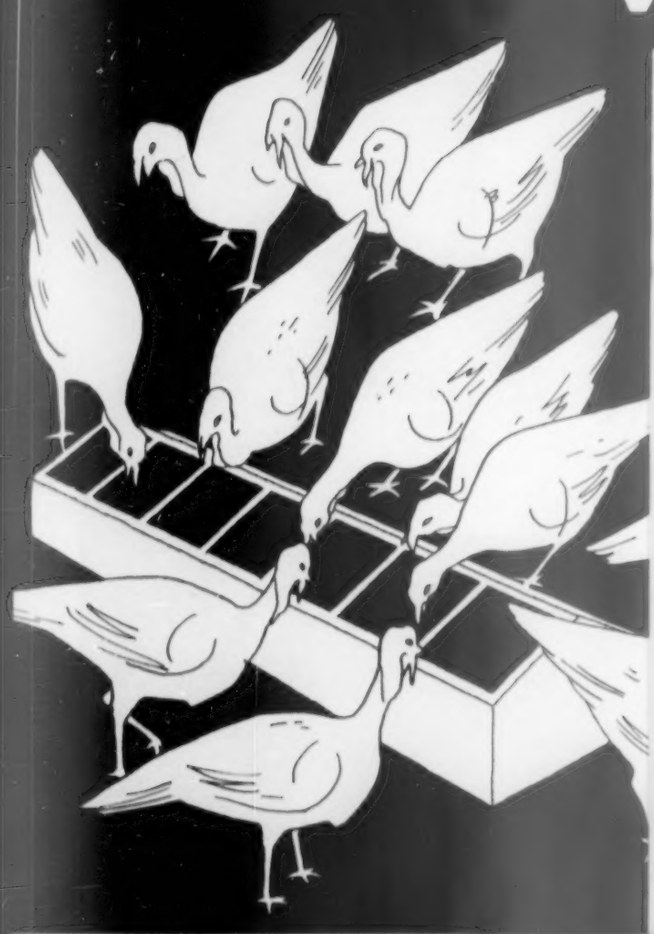
TEAR ME OUT AND KEEP

Here's the new nf-180 practica

when and how to use nf-180

	Level of nf-180	As a specific disease fighter
CONTINUOUS FEEDING	**Two pounds per ton** (0.011% furazolidone)	**Prevents Blackhead, Hexamitiasis and Salmonella infections (Fowl Typhoid, Paratyphoid and Pullorum)**
SPOT FEEDING	**Two pounds per ton** (0.011% furazolidone)	**Effective treatment for Fowl Typhoid, Paratyphoid, Pullorum, and Hexamitiasis. Used with *nf-180* Tablets treats Blackhead.**
	Three pounds per ton (0.0165% furazolidone) **up to six pounds per ton**	This level is necessary for treating Blackhead when no nf180 Tablets are used. (Also treats diseases as indicated under two pound level.) Experimentally, high levels of nf180 show value for eliminating Salmonella infections, such as Pullorum and Fowl Typhoid, from breeder flocks. It should be used with the usual blood tests and all identified reactors removed.

why use nf-180



Bacterio-Spectrum (Partial) of Furazolidone

N(5 NITRO—2—FURFURYLIDENE)—3—AMINO—2—OXAZOLIDONE

Genus	Species	Strains Tested	Disease in Poultry	Effective Inhibition in Vitro (parts per million) 24 hours	96 hours
Salmonella	typhimurium	4	Paratyphoid	1.2	3.7
	gallinarum	8	Typhoid	1.4	2.0
	pullorum	4	Pullorum	0.3	0.7
	enteritidis	5	Paratyphoid	2.8	4.5
Escherichia	coli	3	Non-specific pus former	0.7	1.4
Proteus	vulgaris	5	Non-specific protein putrefaction	24.3	64.9
Pseudomonas	aeruginosa	6	Non-specific pus former	99.0	99.0
Pasteurella	multocida	5	Cholera	4.9	12.2
Hemophilus		1	Coryza	96.0	96.0
Streptococcus	pyogenes	4	Pus former. Non Specific Associated with hockdisorder	13.1	20.0
	faecalis	2	Pus former	12.1	60.6
Mycobacterium	tuberculosis	1	Tuberculosis	19.5	19.5
Clostridium	botulinum	1	Botulism (Poultry & Animals)	0.2	1.0
Micrococcus	pyogenes var. aureus	7	Pus former—Joint Infections	3.5	6.1
			DISEASES IN OTHER ANIMALS		
Clostridium	tetani	1	Tetanus	0.1	0.1
	perfringens	1	Gas Gangrene	0.2	2.0
Brucella	abortus	3	Contagious abortion	5.9	11.8
Bacillus	anthracis	4	Anthrax	0.9	1.7

l feeding program

Plus Values	Recommended for Use in
A disease preventative and growth promoter Preliminary results indicate that **nf180** will soon be labeled as a preventive drug for still other economically-important diseases not now claimed on the label. In still other disease outbreaks, **nf180** may help in keeping birds on full feed and generally reduces the seriousness of secondary infections. Birds fed **nf180** continuously have a keen appetite, grow rapidly, seem able to throw-off many serious infections, and show hasty recovery in event serious disease strikes. **nf180** may be fed without harm during or following vaccination.	**Chick Starter and Grower Feeds** **Turkey Starter and Grower Feeds** **Turkey Finishing Feeds** **Broiler Feeds** **Turkey Broiler Feeds**
A conditioner in time of stress **nf180** is an excellent feed medicament to use before and during a known stress period. Its wide-spectrum of action makes it invaluable in combatting many diseases not identified with specific organisms, such as infections caused by secondary invaders. **nf180** is particularly valuable in this regard during a vaccination program. Generally it is recommended that poultrymen have a supply of **nf180** medicated feed handy to use at the first sign of abnormality in the flock. **nf180** may be wisely recommended to keep birds on feed following a disease outbreak and prior to a competent diagnosis.	**Conditioning Feeds** **Custom-Mixed in Regular Rations during any Stress Period.** **Turkey and Chicken Breeder Feeds**

where to get nf-180

Thirteen convenient shipping points, strategically located to give you immediate delivery of **nfz**, **nf180**, and other Dr. Hess Feed Products.

Write, phone or wire your orders to Feed Products Division, Dr. Hess & Clark, Inc., Ashland, Ohio. But don't wait for an emergency to arise before you stock up on **nf180**. Be sure your dealers always have **nf180** feeds available.

Dr. HESS & CLARK, Inc., Ashland, Ohio

SPECIALISTS IN FEED MEDICATION

CAPEX
DEHYDRATED
ALFALFA MEAL
Also All Grades and Grinds Sun-Cured
•
THE A. B. CAPLE CO.
Toledo 5, Ohio

work locally to help send sales up. It's his job as well as ours."

"You're right," said the publisher, "and if clubs and citizens read about how others have boosted milk sales, they'll start using more milk and urging others to do so. Now, how can I help in this ad program of yours, Joe?"

News Stories Needed, Too

The feed dealer chuckled. "You can help a lot. I'll run the ad and pay the regular price. But this milk idea is so important that I would like to have you—with my help—publish some stories about how individuals, clubs and stores and farmers, too, can help increase milk consumption at home, in schools, etc. Then I would like to have you publish one or two case history stories about leading dairy farmers detailing all their operations from feeding their cows to marketing their milk. This is to give the public a better idea of the scientific care, skill and cleanliness that go into producing good milk. It will also give the farmers more pride in their dairying."

"I'll be glad to do that, Joe," promised Tucker. "I, too, feel that we shouldn't confine our dairy promotions to June, the Dairy Month, but we should keep plugging all year long."

Joe nodded. "Yes, it's a big job, but it can be done. When I am through with this dairy ad. I'm going to run one on eggs and poultry meats, trying to promote increased consumption of these products. Then I'll also tackle butter. Remember—our campaigns on these products went over very well last year."

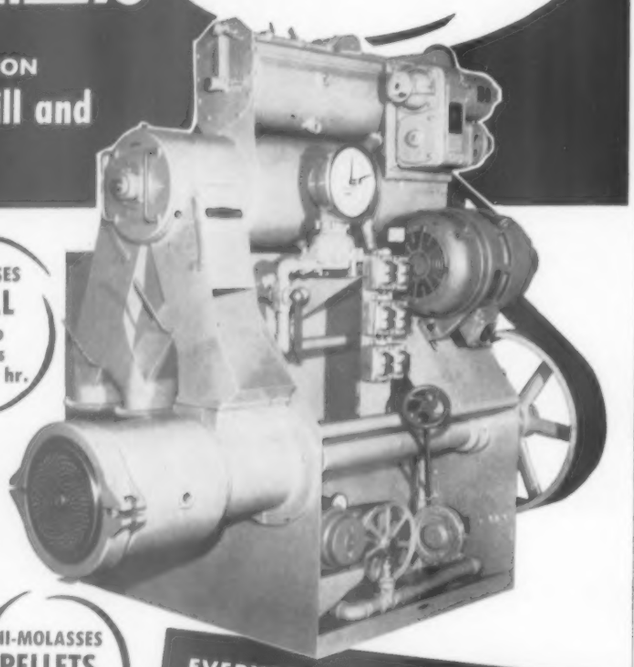
"They really did, Joe, and I know that most grocers' butter sales are way up in this town over last year as a result."

Farmers Need Encouragement

Joe shifted position in the chair. "I'm very encouraged at the way the people in the trade area are appreciating the farmer and what he produces for them," he said, "especially in the last few years. Being with so many farmers I feel that they need encouragement, they need praise, and they need help so that their creative and productive energies work for them most of the time. The farmer who is down in the mouth, despondent about costs and markets, etc., is very little good to himself and his family and community. If he can just feel that he is not alone, that the entire community is back of him and will support him in promoting his products, this can make a tremendous difference to him month after month. I think a lot of merchants who sell to the farmers have not yet realized their responsibility on this score."

The newspaper man smiled. "Joe," he said, "you have also opened my eyes a little more to the importance of farmers. I think I'll make it a point to publish about two good editorials a month on farm progress, especially in this area. Maybe that way I can do my share for the farmer, too."

NEW!
Wenger Super 75
for the LARGER FEED MILLS
PACKAGE UNIT COMBINATION
High Molasses Pellet Mill and Feed Mixer



✓ One man operation of all elements of pellet production through completely coordinated controls of this integrated unit.

✓ Major savings in installation and operation costs.

✓ Every part of this integrated unit—Feeder, Mixer, Molasses controls and Pellet Extruder built for and coordinated with every other part.

MOLASSES MEAL Up To 20 tons per hr.

HI-MOLASSES PELLETS Up To 6 tons per hr.

Now, with this new high capacity Molasses Pellet Mill, major formula feed mills can produce the finest high molasses pellets with a single package unit designed and engineered for minimum costs per ton of production—for minimum installation and operation costs—for ease and efficiency in operation. This compact unit—the result of Wenger's 20 years of experience in producing High Molasses Pelleting Systems, is operated with Wenger's new Horizontal Pellet Cooler to produce the finest in Hi-Molasses Pellets.

WRITE TODAY for descriptive material—installation prints, also. Ask for Wenger's new booklet on "Roughage Busting". Smaller Wenger Pellet Mills—capacities from 3 tons also available.

EVERYTHING YOU NEED IN A SINGLE COMPACT UNIT

—Incorporating these features for maximum efficiency—for one man operation of entire integrated system.

1. Reeves Variable Speed motorized feeder.
2. Steam Jacketed High Speed Mixing Cylinder.
3. Amperes Meters for Pellet Extruder Motor.
4. Automatic Electric Molasses Level Control.
5. Dual-handed set back Molasses Meter.
6. Steam Jacketed feeder and mixing cylinder.
7. Single panel, six station push-button control for entire Integrated High Molasses Pellet System.
8. 430 gal. Molasses tank and Molasses Heating coils.
9. Automatic steam regulator and thermostatic controls.
10. Molasses temperature gauge.
11. Wenger metered flow pump.
12. Built-in Molasses agitator.
13. Wenger Super 75 Molasses Pellet Extruding Cylinder.
14. Pellet dies from ¼" to 1" pellet size.
15. Dual baggers for molasses feeds.
16. One-minute changeover from pellets to meal.

Wenger Mixer Mfg. Co.
SABETHA, KANSAS Phone 111
Standard of the Industry for Molasses Feed Mixing and Pelleting Equipment.

NOT JUST ONE FEED
...You Sell All 3 with
Blatchford's
ESTABLISHED IN 1900
"LOW COST FEEDING PLAN"
Eliminates 'Go-Backs'
Calves go smoothly from one feed to the other without set-backs of ordinary feed changes. Quicker weaning . . . less chance of scours.
STEP 1—CALF-PAB
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ASK YOUR DISTRIBUTOR OR WRITE US TODAY ABOUT THIS POPULAR NEW PLAN!
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KAFIR & MILO
Largest Dealers in Southwest
MID-CONTINENT GRAIN CO.
Kansas City, Mo.

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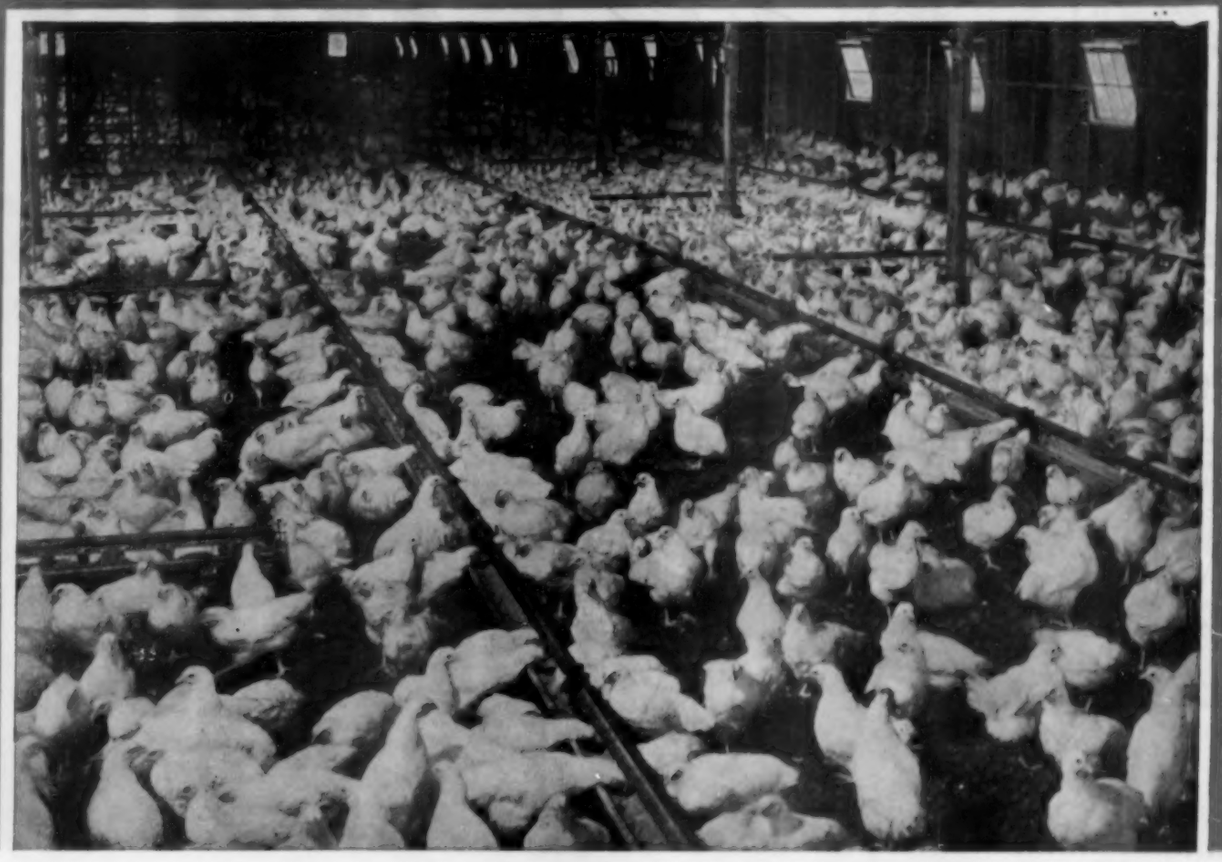
Furnish GROWTH POWER For Sure



Vitamin Levels Assured by the Merck Laboratories

Modern high-energy broiler feeds require specific vitamin supplementation for maximum performance and economy. Merck Vitamin Mixtures are quality-controlled—an important adjunct to your own quality-control program.

The carriers of Merck Vitamin Mixtures are not by-products, but are field-proved materials, selected through research to provide top performance in feed mill use. An extensive testing program has confirmed the compatibility of Merck feed ingredients with other ingredients normally used in feed formulations.

Merck Vitamin Mixtures are quickly available from convenient shipping points.

NEW FACILITIES AT ST. LOUIS, exclusively devoted to the feed industry, enable Merck to offer supplements in a wide range of specifications to meet your needs. By making Merck—the world's foremost producer of vitamins—your prime source of supply for these products, you are sure of getting the best quality available. You also save time and simplify purchasing.

Research and Production for Better Poultry and Animal Nutrition

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Manufacturing Chemists
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Hottest Packaging Idea for

SQUARE DANCE PRINT BAGS from Fulton

You get all these selling aids to help your retailers!

GET 'EM HERE!
(Your Brand Name)
PACKED IN
Fulton's
ORIGINAL, EXCLUSIVE
SQUARE DANCE PRINTS
MATERIAL IN EACH BAG IS WORTH
52¢
BUY SEVERAL BAGS AND MAKE 'EM INTO SQUARE DANCE SKIRTS, BLOUSES, DRESSES AND SHIRTS!

FREE mats for your retail customers to use in newspaper advertising.

FREE point-of-purchase display signs, with space to *imprint your brand name,* for use in retail stores.

On each bag—your choice of butt band, or butt tag sewn in bottom of bag.

Retail value of the fabric to the consumer—52¢ per bag—is displayed on signs, butt bands and butt tags.

Feed and Flour in '55 . . .

Important: The Square Dance Prints promote repeat purchases of your brand. Butt bands and butt tags feature suggested patterns and number of bags required to make blouses, shirts and skirts.

Now, the *increasing popularity* of Square Dancing can work for you to *increase sales* of your brand over competition—right at final point of purchase.

THIS IS BIG—MOVE FAST!

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BAG & COTTON MILLS

ATLANTA • CHICAGO • DALLAS • DENVER • KANSAS CITY • LOS ANGELES
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IF YOU ALSO PACK IN MULTIWALLS LOOK TO

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for sparkling printing
clean, bright finish
true quality look

U.S. Commercial Storage Space Shows Big Gain

WASHINGTON — A U.S. Department of Agriculture survey of commercial grain storage facilities for 1954 discloses that there has been an increase in those facilities of nearly 650 million bushels since 1951, bringing the industry capacity up to approximately 2,820 million bushels.

This official estimate confirms trade estimates made last year by Frank A. Theis, Simonds-Shields-Theis Grain Co., Kansas City, and president of the Terminal Elevator Grain Merchants Assn. He forecast publicly that total commercial storage space would be in excess of 2,700 million bushels. The Theis estimate, called excessive by government officials at that time, fell short of the USDA survey report by approximately 1%.

Kansas has more commercial facilities than any other state, with a capacity of 332,470,000 bu. Texas, dropping into the second spot since the 1951 survey, has an estimated commercial warehouse capacity of 289,962,000 bushels. Other leading storage states according to the report are: Illinois, 224,697,000; Minnesota, 212,230,000, and California, 114,104,000.

Presents Net Figure

USDA says this 1954 survey presents a net figure, taking into consideration additions for new facilities completed or currently under construction as well as reductions due to destruction or abandonment since the 1951 survey.

On the basis of the close comparison with the Theis estimate of early last year, trade sources are willing to accept this report as being reliable.

Commodity Credit Corp. storage facilities are not included, nor are the storage facilities represented by the "mothball fleet" on the East and West Coasts.

On the basis of prewar crops, the commercial storage total is seen as staggering and far in excess of requirements for crops if and when the government should impose maximum acreage restrictions on grain crops. One modifying aspect which makes the warehousing industry outlook somewhat brighter is the fact that the government now holds substantial carryovers of old crop grains, with small likelihood that it will be able to reduce those carryovers substantially.

The warehouse industry would feel a real pinch if and when cross-compliance were imposed on acres taken out of production on basic commodities.

For example, even under maximum acreage restrictions next year and based on normal domestic and export requirements, it is improbable that there will be any substantial reduction in the government stockpile of wheat by the close of the crop year on June 30, 1956.

Indiana Commercial Feed Tonnage Gains in 1954

LAFAYETTE, IND. — A preliminary tabulation shows that the total tonnage of commercial feed sold in Indiana in 1954 may top the amount sold in 1953, which was estimated at 1,320,000 tons. This was reported recently by P. B. Curtis, associate state chemist, Purdue University.

A comparison of tonnages of various types of feeds shows that the most significant increase in 1954 was in medicated poultry feed, Mr. Curtis said.

In this connection, he warned livestock men to feed medicated poultry feeds only to poultry. Feeding of the medicated poultry feeds to other animals, particularly swine and dogs, may be detrimental, he said.

During 1954 the state chemist's office received approximately 4,000 official feed samples. The samples represented products of more than 900 feed manufacturers or registrants, and consisted largely of formula feeds.

Tamms Industries, Inc., Names Representatives

CHICAGO—The raw materials division of Tamms Industries, Inc., Chicago has recently appointed new representatives in the following areas:

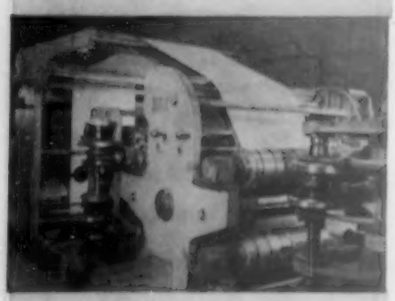
Robert Chenoweth, 531 Esperson Bldg., Houston 2; Victor Roberson Co., 4515 Olive St., St. Louis 8; Russell & Palmer Co., P.O. Box 2674 Customs House Station, New Orleans, and Robert F. Sheahan Co., Suite 728, M & M Bldg., Memphis 2.

LAY RATE HIGH

WASHINGTON—The Netherlands led the world in annual number of eggs per hen in 1950 with a production of 183. Second was Denmark with 145 and third was U.S. with 137.

This automatic ply-assembly and tubing machine turns out thousands of better-built V-C Bags an hour. Two- to six-ply bags are manufactured by the same machine with equal efficiency.

After ply-assembly, tubing and cutting, comes top and bottom sewing. Operator above is inspecting finished sewn-bags as they come from sewing machine.



One of V-C's modern printing presses. Capable of printing from one to four colors, V-C presses help put "sell" in your bags and faithfully reproduce your trade design.

V-C's Modern Equipment Means Better Bags for You

The most modern methods, materials and machines are used in manufacturing V-C Multiwall Bags. This means you get the advantages of the latest developments in bag-making—some of which have been pioneered by V-C. Write for full information about V-C Bags, or discuss your requirements with a V-C representative. It will pay you to get V-C's free technical assistance.

VC BAGS

Virginia-Carolina Chemical Corporation

BAG DIVISION: 9th and Perry Streets, Richmond 5, Virginia

DISTRICT SALES OFFICES: Atlanta, Ga. • Wilmington, N. C. • New York, N. Y. • E. St. Louis, Ill. • Cincinnati, Ohio

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Bo-A and PROT-A
(Stable Dry Vitamin A Products)

Bo-DEE
Vitamins D-2 or D-3 in dry, oil or water dispersible forms

Bo-DEE MINERAL STABLE VITAMINS D
(Vitamin D that will not decompose when combined with minerals)

CLOROFOLEN
(Proven Dog Food Deodorant)

HYDROPOID
(Dry Hydrogenated Animal Fat)

PALATEAZ
(A Complete Line of Flavors for feeds)

XANTHOPHYLL CONCENTRATES
(For Greater Poultry Pigmentation)

Bowman Feed Products, Inc.
130 Central Ave., HOLLAND, MICH.

THAT GOOD
UNIFORM
MEDO GREEN
ALFALFA
BREMCO
ALFALFA MILLS, Inc.
NEW BREMEN, OHIO
PHONE —35 & 25—

1ST in Pellet Capacity
CPM
CALIFORNIA PELLET MILLS

Let us send you the

LATEST EVIDENCE

that your broiler feeds can produce meat at less cost per pound!

Recently, 8,400 broilers in 24 pens were fed for 10 weeks on basal rations comparable to top-quality commercial feeds. In half the pens Methionine was added to the ration. These birds on Methionine averaged 3.38 pounds at the finish and ate only 2.44 pounds of feed per pound of gain.

Let us send you a complete report on this, the latest of a series of large-scale tests run by Du Pont.

Feeds for fast-growing broilers often do not contain optimum amounts of Methionine. Its addition assures an adequate supply for rapid and efficient growth and early feathering. It will pay you to check, today, on Methionine for your formulations. E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Dept., Animal Nutrition Section, Wilmington 98, Del., Du Pont Company of Canada, Box 660, Montreal, Province of Quebec.

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

DUPONT METHIONINE

Balancing of Farm Production to Market Urged

WASHINGTON — The Agricultural Research Policy Committee has recommended the strengthening of research aimed at balancing farm production to meet changing market outlets, and at the relationships of government programs to efficiency in producing and marketing agricultural products.

Committee members, in their quarterly meeting here Feb. 17-18, made the recommendation in the belief that not enough economic data is available on the interaction between various commodities when changes occur in volume of production and in market demand.

In its review of the department's research program and facilities, the committee considered the long-time implications of both domestic and foreign agricultural programs and urged emphasis on better human nutrition. It recommended that the objective of providing food that would improve the health of people of the U.S. and of other countries should be a major consideration in the selection and conduct of research projects in production, utilization, marketing, and consumption.

The committee also undertook preliminary work on development of a report on the long-time objectives of marketing research, service, and educational work. This report when issued will be similar to the report "Agricultural Research—a Key to Strengthening Our American Way of Life," issued in February, 1953, which dealt with the long-time objectives for agricultural research.

Established under the Research and Marketing Act of 1946 to advise the Secretary of Agriculture on research and marketing work, the committee by law meets quarterly.

Use of Sweet Potatoes As Livestock Feed Studied

STILLWATER, OKLA.—The Oklahoma Experiment Station recently reported on studies to learn whether sweet potatoes, which are high in carbohydrates, can be profitably grown as a feed to replace some of the corn and oats in livestock feeding.

The station said the study showed: Dried or dehydrated sweet potatoes are an acceptable feed for cattle; sandy land that is undesirable for most carbohydrate feed crops may be used for sweet potato production; the cost of dehydrating sweet potatoes is high compared to that of corn; when corn prices are high, sweet potatoes may be very well substituted for at least half of the concentrate ration.

Therefore, the Oklahoma researchers say, many of the sandy soils of Oklahoma could be used to grow sweet potatoes for livestock feed.

Exchange Urges Farm Law Change

MINNEAPOLIS—The board of directors of the Minneapolis Grain Exchange recently adopted a resolution pointing out that the exchange feels that present farm laws should be so changed that the government will no longer be buying, selling, storing and moving grain in competition with the commercial trade.

It is evident, the exchange notes, that present farm legislation has made the federal government an involuntary merchandiser of grains, the result has been "partial nationalization of the grain trade with the government competing substantially with its own citizens."

The resolution goes on to say:

"While many alternative farm plans have been offered in the past which would avoid this undesirable situation, the exchange cannot advocate particular plans or levels of support. Nor can it judge the extent to which U.S. Treasury funds should be allocated to particular segments of the population.

"The exchange does, however, subscribe to the principle that the efficient, low-cost, commercial marketing system benefits the whole nation, and that freely moving prices in a competitive public marketplace are by far the best and most effective way to adjust the production and the consumption of grain in a realistic and progressive manner.

"The exchange does not feel that the granting of federal aid to agriculture needs to lead automatically to nationalization of the grain business. So that farming and the grain trade will not both become stagnant, socialized businesses in the U.S., the exchange asks that the Agriculture Committees of both the Senate and the House seriously consider during this session of Congress, other suitable and better methods of supporting agriculture."

Quality Materials

Modern, Efficient Plants and Equipment

Exacting Standards and Rigid Inspection

Brilliant, Multi Color Brand Printing

Dependable Delivery Service.....make

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THE FINEST SHIPPING SACKS OBTAINABLE FOR YOUR PRODUCTS

Hammond Multi-Wall Bags . . . shipping sacks of highest quality . . . are produced in three modernly equipped, strategically located plants. Our sales representatives, with offices in 11 principal cities, have a thorough understanding of your packaging problems and are at your service at all times. Why not call in the one nearest you today, from the list below. Let us show you what Hammond's quality and service can mean to you.

"TREES ARE A CROP"

For Multi-Wall bags, "Make it a Habit to Depend on Hammond"

HAMMOND BAG & PAPER COMPANY General Offices: Wellsburg, W. Va.

Plants in Wellsburg, W.Va., Pine Bluff, Ark. and Charlotte, N.C.

Representatives in the following cities: New York, N. Y., Chicago, Ill., Minneapolis, Minn., Kansas City, Mo., Cleveland, Ohio, Atlanta, Ga., Washington, D.C., Dallas, Texas, Charlotte, N. C., Ligonier, Pa., Bluefield, Va.

IT'S ECONOMY WISE TO JERSEEIZE WITH JERSEE

VITAL-MIN a Pre-Mix

VITAMINS MINERALS

Made by the builders of VITAMINIZED and MINERALIZED CONCENTRATES since 1922.

Jobbers and Warehouses From Coast to Coast

THE JERSEE CO. MINNEAPOLIS MINN.

WRITE TODAY FOR DEALERS SALES HELPS!

BRAN • SHORTS MIDDLINGS

Sacked or Bulk—Any Shipment

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Statistical Charts Furnished Free. We Handle Futures Trades in Kansas City.

Be sure to see the KELLY DUPLEX at next week

THE NAME VICTOR ON FEEDS CEREALS — FLOUR MEANS QUALITY

B. A. Lucius

OPENS FIRM — **B. A. Lucius, formerly assistant purchasing agent for Universal Mills, Fort Worth, Texas, opened his own grain brokerage business at 3007 Race St., Fort Worth, March 1. Mr. Lucius joined Universal Mills' traffic department in 1937 and following three years of Army Air Corps service during World War II, rejoined Universal in 1946 in the purchasing department. He attended Texas Christian University and is vice president and a charter member of the Fort Worth Grain & Feed Club.**

New Mexico Drouth Situation Improves

ALBUQUERQUE, N.M.—Some improvement in the drouth situation here is observed by H. B. Hening, secretary of the New Mexico Grain & Feed Dealers Assn.

"Last year, at this time, 31 of our 32 counties were on drouth relief, both for livestock loans and for Commodity Credit Corp. feed," he pointed out. "But this year, when the program was terminated Feb. 15, there were no protests or requests for reinstatement from any county. All New Mexico counties are now off the list."

He hastened to add, however, that New Mexico stockmen had suffered three consecutive years of drouth and would be in a serious situation without spring rains.

Prior to Feb. 15, there were 19 counties still on the feed program. The southern counties were allowed to buy a 60-day supply of feed, and the northern counties a 90-day supply. Because of the difference in altitude, the range usually comes back by mid-April in the south and by mid-May in the north.

If spring rains are lacking, Mr. Hening feels sure that there will be requests for reinstatement of the program. Currently, there is a definite improvement in the northwest, southwest and southeast.

The Right Combination OF GROWTH FACTORS

- Antibiotics
- Vitamins
- Trace Minerals

Branded premixes of superior quality. Write for information.

HOLT PRODUCTS CO.
Box 848, Milwaukee 1, Wis.

Every Good Feed
Get your supplies from
HENRY K. FAUST
Successor to King Brothers & Co.
The Bourse, Philadelphia 6, Pa.

Specialist in Grain Sanitation Named

WASHINGTON—The U.S. Department of Agriculture has announced the temporary appointment of Clyde C. Noyes, Lincoln, Neb., to the Federal Extension Service, effective March 1.

C. M. Ferguson, administrator of the extension service, said Mr. Noyes will join with USDA specialists in assisting the state extension services in an intensified educational program on grain sanitation. He will be on leave from the University of Nebraska, where he has been state leader of extension programs.

For many years state extension services in the principal grain states have been conducting educational programs to help farmers, elevator operators and grain dealers in providing better grain storage. They have also been assisting farmers in controlling insects, rodents, and other pests in order to prevent heavy losses in stored grain and to maintain the quality of cereal foods. It will be Mr. Noyes' responsibility to further develop these educational efforts.

NEW IOWA FIRM

IOWA CITY, IOWA—The Johnson County Seed Co., Inc., has been formed here to deal in feeds, grains and seeds. Edward M. Baker is president and treasurer and Russell Mann is vice president and secretary.

Doughboy Superintendent

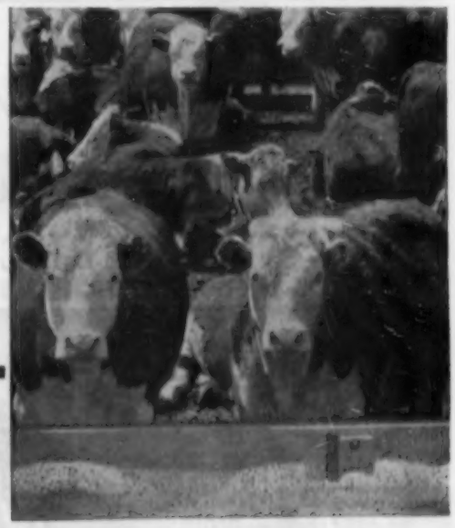
NEW RICHMOND, WIS. — Henry Kraemer, assistant superintendent in charge of production and planning at the Minneapolis plant of Ralston Purina Co., has been appointed superintendent of the milling division of Doughboy Industries, Inc., according to Ray Wentzel, vice president of the division. Mr. Kraemer fills a position vacated when Paul Bauch resigned to become superintendent for the Pacific Mill & Elevator Co. in California's central Sacramento Valley.

TRADE MARK REG.
VITA-GEE
A LIVE YEAST CULTURE — for 4-footed animals and poultry. Supplies all known B Complex Vitamins including B_{12} plus other nutritional factors. Easy to add to any formula.
Write or Wire for sample and prices.
ZELLERS' LABORATORIES READING, PA.

REPORT TO THE FEED INDUSTRY ON

Stilbosol

(DIETHYLSTILBESTROL PREMIX, LILLY)



90 days after release new gain-booster helps fatten 38% of nation's cattle...*

THANKS to fast action by the feed industry, 'Stilbosol' is now being added to enough commercial supplement to give an estimated 38% of all market cattle now on feed the benefit of this new beef-building additive. This is said to be the most rapid adoption of a new practice in the entire history of American agriculture—all in the short period of three months.

PRICE MOVES DOWNWARD

Since 'Stilbosol' was first introduced we have effected two price reductions totaling about 20%.

We were pleased, but not surprised. In 78 years of service to the medical and pharmaceutical professions, Eli Lilly and Company has consistently reduced prices as large scale production and improved technical processes lowered costs—with or without competition.

'STILBOSOL' RESEARCH PROBES NEW FIELDS

Almost 60 different research projects on new uses for 'Stilbosol' are currently underway. In addition to work by the Lilly agricultural research group, 20 agricultural experiment stations and 40 feed manufacturers have received material for research purposes.

News and results of these and other research projects will be promptly released to the feed industry.

MOVING FORWARD IN BASIC RESEARCH

Starting its research activity over 40 years ago, Eli Lilly and Company was one of the first to study new drugs for better living. For example, it was Lilly research that developed procaine penicillin, now widely used by the feed industry.

Other intensely interesting findings are already at hand. To test them further, we are greatly expanding our plant and animal research units. Additional cooperative research projects are also getting underway.

We expect 'Stilbosol' to be only the first of a long series of products developed to serve the feed industry.

IT HAS BEEN A PRIVILEGE

Meantime, we want to take this additional means of thanking you. The manner in which the feed industry has quickly, safely and sensibly moved 'Stilbosol' into the nation's cattle feedlots is worthy of highest praise. Remember, too, that we are ready to be of service to you and the feed industry. Whether it be an assay, a supplemental application, technical or promotional material—if you think we can help just write, wire, or call us.

**Estimate based on USDA figures for cattle on feed Jan. 1, 1955.*

—Stilbosol—

MAKES THE DIFFERENCE

If you are not yet using 'Stilbosol' in your beef fattening rations, we invite your inquiries. 'Stilbosol' is a powerful new tool for increasing your beef feed business. We would like to help place this sales-building additive in your rations.

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ELI LILLY AND COMPANY, AGRICULTURAL PRODUCTS DIVISION, INDIANAPOLIS 6, INDIANA

Sanitation Standards as Part of U.S. Grain Standards Opposed

KANSAS CITY—Objection to the inclusion of the Food and Drug Administration standards of rodent and insect infestation in the federal grain standards was voiced to the U.S. Department of Agriculture recently by the Grain & Feed Dealers National Assn., through its uniform grades committee.

Such standards should have a reasonable degree of permanence and should be based on trade experience, the association stated, in objecting to the use of the grain standards "for the enforcement of a wholly unrelated law."

In a wire to Roy W. Lennartson and James A. McConnell, U.S. Department of Agriculture officials, Kenneth S. Hart, head of the association's uniform grades committee, said:

"In connection with current consideration of changes in the grain standards to incorporate present standards of Food and Drug Administration relating to rodent and insect contamination of wheat, please be advised that the Grain & Feed Dealers National Assn. does not recommend or indorse such consideration but on the contrary strongly opposes any change at this time.

"The Food and Drug standards are purely arbitrary and should not be the basis for changes in grain standards. Such standards to be of value must have a reasonable degree of permanence and be based upon trade experience, concerning which information is now lacking. Moreover, we regard it as an abuse of the grain standards to use them as a vehicle for the enforcement of a wholly unrelated law. The recommendations of the 17-man advisory committee relating to education and research should have prior attention and be given effect before the grain standards are tinkered with.

"This statement is made for our membership located throughout the nation and including all elements of the grain merchandising trade."

Oregon Feed Association To Meet March 24-25

PORTLAND, OREGON — The annual convention of the Oregon Feed & Seed Dealers Assn. will be held at the Multnomah Hotel, Portland, March 24-25.

ADDS FEED LINE

MOUNT PLEASANT, IOWA—The Rabedeaux Produce here has expanded by adding a feed line.

ROYAL GARMENT—National cotton bag sewing queen, Mrs. Oletta Schwabe, Pueblo, Colo., will be on hand for the National Feed Industry Show and Midwest Feed Manufacturers Assn. convention at Kansas City's Municipal Auditorium, March 14-16. Here she tells Don McNeill of ABC Breakfast Club fame that her two squaw dresses were made from eleven 100-lb., powder-blue feed bags. The queen will display her winnnig entries at the exhibit sponsored by the National Cotton Council. The council and the Textile Bag Manufacturers Assn. annually sponsor a nationwide cotton bag sewing contest in cooperation with Pfaff Sewing Machines.

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The poultry industry has come a long way since the "Chicken on Sunday" era! Today, poultry is mass-produced by progressive management and scientifically balanced feeds. This makes chicken or turkey a thrifty choice for the family table instead of a special-occasion item. Methionine keeps poultry rations "in balance."

Low-level methionine supplementation pays for itself on the basis of bringing broilers and poults to market weight on less feed—plus the improvement in feathering and finish. This is reflected in bigger income over feed cost for the poultryman and in top-quality poultry at reasonable prices for the consumer.

Dow feed supplement takes guesswork out of nutritional balance and performance . . . brings feeds to their most efficient peak

During World War I, it was big news in the poultry industry when the sale of commercial poultry feeds reached a new high of nearly 5 million tons a year. At the end of World War II, the total rose to 19 million tons a year. Today it has passed the 20 million ton yearly mark. Nutritional developments have kept pace with the increased production of high-efficiency poultry rations. Every year, more feed—*better feed*—is converted into more pounds of high quality meat birds at *lower feed costs* to the grower.

Improved broiler and turkey rations containing vitamins, antibiotics and nutrients unknown a few years ago reach a new peak in feed efficiency when they are supplemented with methionine, the essential protein building block. Synthetic methionine added at low levels balances the variation in "natural" methionine which can be expected in high-grade corn-soy feeds, with or without fish meal added. Methionine-supplemented feeds, which bring the birds to market weight on less feed, are making chicken —also turkey—a thrifty buy for the family food dollar. The words "Methionine Added" on your feed tags mean top quality feed to your customers. Ask your nutritional advisor for complete information on methionine, the *modern* feed supplement for controlled premixes and balanced poultry rations. THE DOW CHEMICAL COMPANY, Agricultural Chemical Sales Department, Midland, Michigan.

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Arkansas Tax Taken Off Feed

LITTLE ROCK, ARK. — The Arkansas sales tax was removed recently from livestock and poultry feed.

Gov. Orval Faubus signed into a law a bill which removes the state's current 2% sales tax from feeds.

Legislative and gubernatorial approval of the measure represents a victory for poultry, livestock and feed men who had sought exemption of feed from the tax. Among the groups backing the bill was the Arkansas Feed Manufacturers Assn.

The bill exempting feeds was regarded as a compromise measure, offered after defeat of a bill to take the tax off feed, seed and fertilizer.

Earlier, in 1953, the Arkansas legislature passed a bill exempting feed, seed and fertilizer from the sales tax, but Gov. Francis Cherry vetoed the measure. A subsequent proposal was aimed at exempting only poultry feeds but also failed to be enacted.

Backers of the feed exemption measure held that it was necessary to enable Arkansas poultry growers to compete on an equal basis with growers in states without a sales tax. Opponents argued that the state would lose too much revenue if the measure were passed. Estimates of the amount of lost revenue ranged from $1 to $3 million annually.

MONTANA FIRE

MOCCASIN, MONT.—The Rocky Mountain Grain Elevator, operated here by Earl Marshall, burned recently. It contained about 22,000 bu. Commodity Credit Corp.-owned wheat and was a total loss.

EGG PRODUCTION UP

WASHINGTON — The output of eggs in the U.S. in 1950 was 70% above the production in the prewar years, while the number of laying hens increased only 20%.

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Rely on the vitamin E in natural seeds and grains to put the vitamin E in your feed and you're taking a chance on two things: (1) there may not be enough there in the first place and (2) what is there may lose its potency in milling, mixing, and storage.

Use a few dimes' worth of Myvamix Vitamin E Feed Supplement per ton and you're *sure* of two things: (1) there will be vitamin E to start with, and (2) it will still be there when the feed is eaten. That's because you start with material you can count on to have 20,000 International Units of Vitamin E to the pound, and the vitamin E is in the *acetate* form that will hold its potency even after storage in finished feed for six months at 100 F. We put the vitamin E in Myvamix on a dry, non-dusting soy meal base that makes it as easy to handle as anything in your mill. For information or a quotation, write to ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York and Chicago • Charles Albert Smith Limited, Montreal and Toronto.

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PROGRAM PLANNERS—These members of the American Dehydrators Assn. are planning the program for the annual production conference of the organization, which will be held March 21-22 at the Phillips Hotel, Kansas City. Left to right are Richard Brierley, W. J. Small Co. Division Archer-Daniels-Midland Co., Kansas City; Raymond Bert, Bert & Wetta, Maize, Kansas; Loren Burns, feed technologist, Kansas State College, Manhattan; Richard Beermann, Beermann Bros. Dehy., Dakota City, Neb., and Robert Fulton, W. J. Small Co. Division, Archer-Daniels-Midland Co. The two-day session is planned to start with a general discussion of the feed industry and dehydrating industry outlook, followed by specific discussions on antioxidants, greasing, pelleting, gas storage and granulation. Following discussions by speakers on each of these topics, there will be a panel discussion and a question and answer session.

Allis-Chalmers Sales Off; Profit Higher

MILWAUKEE—A 1954 sales volume of $492,948,963 and net earnings of $26,130,430, equal to $7.20 per common share, were announced recently by Allis-Chalmers Manufacturing Co.

Sales in 1953 were higher at $514,474,465, but profit was less at $21,943,569, equal to $6.58 per common share.

Defense production declined approximately 25% in 1954.

W. A. Roberts, president, said another highly competitive year is expected in 1955, "with a fighting chance to approach 1954 sales figures."

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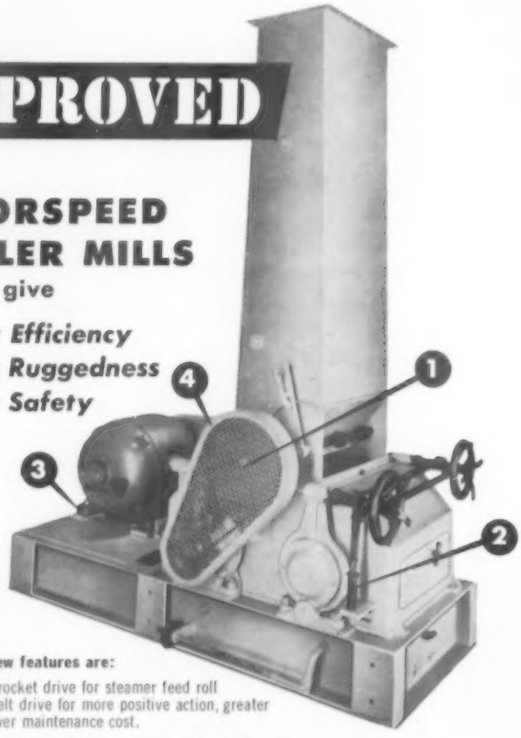

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Amino Acid Requirements of Swine

By Dr. L. V. Curtin
Buckeye Cotton Oil Co.

EDITOR'S NOTE: Considerable progress has been made in the last few years towards putting the protein requirements of swine on an amino acid basis, Dr. L. V. Curtin points out in the accompanying article. Quantitative requirements are now available for all of the essential amino acids, and a valuable summary of this information is presented here. However, the author notes, some of the values should be accepted as only tentative until confirmed or more reliable figures are reported. Dr. Curtin is head of the products research department for the Buckeye Cotton Oil Co., Cincinnati. This article was adapted for Feedstuffs from a talk by Dr. Curtin at the Florida Nutrition Conference.

Amino acids are needed by all animals for building and repairing protein tissues of the body and for production of the many enzymes which function in maintaining life. If adequate proteins are lacking in the diet, there is an immediate reduction or cessation of growth and ultimately a withdrawal of protein from certain less vital tissues to maintain the functions of the more vital tissues as long as possible.

Any requirement for protein is in reality a demand for specific amino acids for tissues and enzymes. A protein molecule is built up of hundreds of amino acids combined with each other. Therefore, it is essential to know the amino acid requirements of animals in order to adequately balance their rations. There are 22 or more recognized amino acids. Many of these amino acids can be synthesized by the pig. However, there are ten amino acids which must be supplied to the pig in his feed. These amino acids are usually referred to as the essential or indispensable amino acids. These amino acids either cannot be synthesized by the pig or cannot be synthesized in sufficient quantity to support maximum growth.

Table 1 shows the amino acids and their classification for the pig. Cystine is not necessary in the diet if there is sufficient methionine to meet the requirements for both methionine and the synthesis of cystine. A similar relation holds between phenylalanine and tyrosine. Tyrosine is synthesized from phenylalanine but is dispensable only when there is enough phenylalanine to meet the needs for both amino acids. It has been shown that the pig can synthesize enough arginine for fair growth; but for maximum growth, a dietary source of arginine is required. Arginine, cystine and tyrosine are referred to as being semi-indispensable.

Before discussing the quantitative amino acid requirements of swine, I would like to mention some of the factors that may affect the requirement.

Relation of Amino Acid Requirement to Protein Level

It has been shown quite clearly with the chick that the lysine, methionine and arginine requirement varied directly with the protein level (Almquist, 1952). The same is true with lysine for turkeys (Almquist, 1952). Working with weanling pigs, Brinegar showed that the lysine requirement was 0.58% of the ration when a 10.6% protein ration was fed and 1.2% of the ration with a 22% protein ration (Brinegar et al, 1950a). These two requirements correspond to 5.7% and 5.5% of the protein, respectively, for the two different rations. It seems almost certain that these findings will apply to all indispensable amino acids.

It is clear, therefore, that amino acid allowances should be stated in reference to a certain protein level. This is also important when interpreting experiments on amino acid requirements. Experimental diets used in amino acid experiments have contained from 13% up to 25% protein. Suckling pig rations have contained 25% of the dry matter as protein. It can make a difference in the dietary requirement whether the amino acid requirement was determined with a ration containing 13% protein or one containing 22% protein. If amino acid requirements are expressed as a percentage of the protein rather than as a percentage of the ration, this problem is eliminated. These facts also emphasize the necessity of paying close attention to amino acid balance when protein levels are altered.

Relation of Amino Acid Requirement to Size and Age

Data on carcass composition presented by Cornell workers (Curtin et al, 1952a) show that the amino acid pattern of the carcasses is comparable at the different growth periods from birth to market weight. Since the principal need for dietary amino acids is for building and maintaining body tissues, the similarity in amino acid composition of the carcass at different ages and weights suggests that the amino acid requirements on a protein basis would be quite similar at all ages.

Data are available on the threonine requirement for both suckling pigs and weanling pigs. The Cornell group reported the threonine requirement of suckling pigs to be 0.9% of the dry matter (Sewell et al, 1952). When

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when... corn costs .80 per bu.
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calculated on a percentage of dietary protein basis, this is equivalent to 3.6% of the dietary protein. The Purdue workers reported a threonine requirement for weanling pigs to be 0.4% of the diet (Beeson et al, 1953a). However, when expressed as a percentage of dietary protein, the requirement becomes approximately 3.0% of the protein for weanling pigs as compared to 3.6% for suckling pigs. The two values are in reasonably good agreement, particularly when considering the errors involved in making the determinations. This comparison again emphasizes the need for expressing amino acid requirements as a percentage of the dietary protein.

tary requirement for a 16% protein ration is 0.3% of the ration.

Isoleucine—Brinegar and associates (1950b) have studied the isoleucine requirement for the growth of weanling pigs. With a 22% protein ration based on blood flour supplemented with methionine, a level of 0.7%

TABLE 1—Amino Acids for Swine

Dispensable	Semi-indispensable	Indispensable
Glycine	Arginine	Histidine
Glutamic acid	Cystine	Isoleucine
Asparatic acid	Tyrosine	Leucine
Alanine		Lysine
Serine		Methionine
Proline		Phenylalanine
Hydroxyproline		Threonine
		Tryptophan
		Valine

TABLE 2—Amino Acid Requirements of Swine

	Per cent of protein	Per cent of 16% protein ration	Per cent of 35% protein supplement
Arginine	1.5	0.3	0.1
Histidine	1.9	0.3	0.3
Isoleucine	3.2	0.5	0.8
Leucine	5.0	0.8	0.3
Lysine	5.5	0.9	2.3
Methionine	1.5	0.24	0.5
Methionine + cystine	3.2	0.5	1.0
Phenylalanine	2.5	0.4	0.4
Phenylalanine + tyrosine	5.6	0.8	0.4
Threonine	3.0	0.5	1.0
Tryptophan	0.8	0.13	0.23
Valine	3.1	0.5	0.6

Amino Acid Requirements

Quantitative amino acid requirements are available for all of the 10 essential amino acids except arginine.

Histidine — Brinegar (1951) has demonstrated that histidine is required by growing swine. His data indicated that the requirement does not exceed 0.38% of the ration containing 20% of protein. This is equivalent to 1.9% of the protein. The exact minimum amount needed for maximum growth rates is not known. By the use of the carcass analysis technique, Williams and associates (1954) obtained a requirement of 1.7% of the dietary protein which is in excellent agreement with Brinegar's suggested figure. The carcass analysis technique used by Williams et al involved an amino acid analysis of the whole carcasses of eight pigs varying in weight from 2 lb. (newborn) up to 205 lb. Using the lysine requirement of 1.1% of protein as a standard, the requirements for the other amino acids were calculated from the ratios of the amino acids to lysine in the carcass. Many of these calculated values agree quite closely with the requirements determined by feeding tests.

Based on a requirement for histidine of 1.9% of the protein, the die-

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Graphs at the right illustrate some results obtained in the first test. Results in both tests are consistent in showing the ability of DPPD to improve utilization of carotenoid pigments. In some instances pigment deposition was doubled.

Based on the results of these tests half of the yellow corn in a practical broiler ration can be replaced with a non-pigmented grain, such as milo, kafir or white corn, without materially decreasing pigmentation, if 0.0125% DPPD is used.

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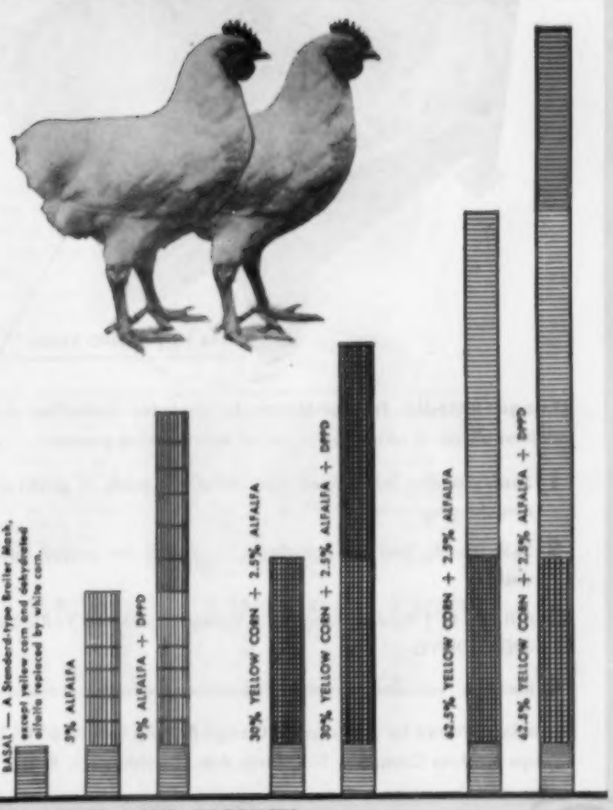

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L-isoleucine produced maximum growth and the most efficient feed utilization. This level equals 3.2% of the dietary protein. Carcass analysis indicated a requirement for tissue growth of only 2.5% of the protein (Williams et al, 1954). The requirement for isoleucine of 3.2% of the dietary protein corresponds to 0.5% of a ration containing 16% protein.

Leucine — Eggert and co-workers (1954) at Cornell determined the leucine requirement of suckling pigs using a simulated milk diet containing casein, crystalline, amino acids and ammonium citrate. The data from this study indicated that the maximum level of leucine necessary for maximum growth and feed efficiency of suckling pigs is between 1.0% and 1.25% of the air-dry matter of the ration. The dry matter of the ration contained 25% protein, so this requirement is equivalent to 4.0-5.0% of the dietary protein. The requirement calculated from carcass analysis is 4.6% of the dietary protein which is in very close agreement with the value obtained by feeding test (Williams et al, 1954).

If we take the highest value of Eggert et al (1954) of 5.0% of the protein, this corresponds to 0.8% of a 16% protein ration.

Lysine — Brinegar and associates (1950a) at Cornell studied the lysine requirement of weanling pigs using three different diets. In the first test, when linseed meal was supplemented with histidine and methionine furnished 10.6% of protein, it was necessary to have 0.6% of L-lysine in the ration or 5.7% of the protein for optimum growth. Two other rations were used which contained approximately 22% protein. In one test, the protein was supplied by sesame meal with added methionine and histidine. In the other test, meat and bone scraps, wheat, zein, methionine, histidine and tryptophan supplied the protein. With both of these diets, maximum rates of growth and greatest efficiency of feed utilization and nitrogen retention occurred on diets containing approximately 1.2% of L-lysine or the equivalent of 5.5% of the protein.

Shelton and co-workers at Purdue (1951a) fed weanling pigs a ration containing 24% protein furnished by zein, gelatin and amino acid supplements. Maximal gains and feed efficiency were obtained when the ration was supplemented to contain 1.0% total lysine, equivalent to 4.2% of the protein.

The Cornell figure, 5.5% of the protein, is taken as more nearly correct since it is based on three experiments with three different rations and at two different protein levels. This level corresponds to 0.9% of a 16% protein ration.

Methionine and cystine — Since a dietary requirement of cystine is required except in the presence of adequate methionine, these amino acids must be considered together. The Purdue workers fed purified diets which contained oxidized casein, gelatin and tryptophan making a total of 21% protein in the rations (Shelton et al, 1951b). These data indicated that methionine requirement of the weanling pig under these conditions was 0.3% of diet or 1.43% of protein. The methionine plus cystine requirement was 0.6% of diet or 2.86% of protein.

The results of four experiments have been reported by Cornell workers (Curtin et al; 1952b, 1952c). Soybean oil meal was used as a source of protein in two experiments, and isolated soybean protein was used in two experiments. All rations contained 22% protein. The methionine plus cystine requirement determined in these experiments was approximately 0.7% of the ration or 3.2% of the protein. The methionine requirement was determined to be approximately 0.32% of the ration or 1.5% of the protein.

Using the Cornell data which are based on a greater number of animals, the methionine and methionine plus cystine requirements of swine are set at 1.5% and 3.2% of the protein, respectively. These values correspond to 0.24% and 0.5% of a 16% protein ration.

Phenylalanine and tyrosine—It has been shown that tyrosine will replace part of the dietary phenylalanine for chicks (Almquist, 1952) and rats (Rose, 1938). Since it is natural to assume that the same is true of the pig, these two amino acids are considered together in this review. Beeson and associates (1953b) at Purdue fed a 13% crude protein equivalent ration containing corn, supplementary amino acids and di-ammonium citrate as the source of protein to weanling pigs. Maximum growth and efficiency of feed utilization were obtained when the ration was supplemented to contain 0.32% digestible phenylalanine and 0.14% tyrosine. These figures correspond to 2.5% of the dietary protein for phenylalanine and 3.5% of the dietary protein for phenylalanine plus tyrosine. These values are in reasonably good agreement with the requirements of 2.5% and 4.0% of the protein calculated from carcass

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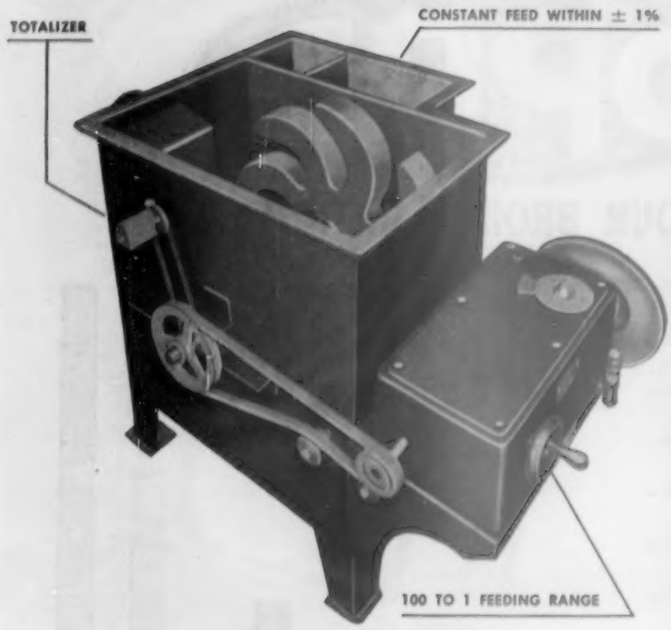

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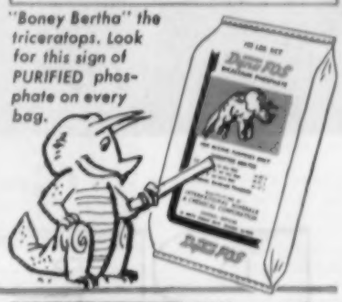

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analysis (Williams et al, 1954).

The requirement of 2.5% of protein for phenylalanine and 3.5% of the protein for phenylalanine plus tyrosine corresponds to 0.4% and 0.6% of a 16% protein ration.

Threonine—Beeson et al (1953a) have shown that the threonine requirement of the weanling pig is approximately 0.4% of a 13.2% protein ration. This corresponds to 3.0% of the protein and is in very good agreement with the data obtained at Cornell with suckling pigs. Sewell et al (1952) obtained maximum growth with most efficient feed utilization when an isolated protein—crystalline amino acid type milk was supplemented to contain 0.9% of the dry matter in the ration or 3.6% of the dietary protein.

The requirement of 3.0% of the dietary protein corresponds to 0.5% of a 16% protein ration for weanling pigs.

Tryptophan—The Purdue workers (Shelton et al, 1951c) reported that the DL-tryptophan requirement of growing pigs fed a diet containing 24% protein is probably not greater than 0.2% of the ration. This corresponds to 0.8% of the protein. Carcass analysis indicated a requirement of only 0.5% (Williams et al, 1954).

The approximate requirement of 0.8% of the protein calculates to be 0.13% of a 16% protein ration.

Valine—The valine requirement of weanling pigs was determined by Jackson and co-workers (1953) by feeding a 12.8% protein ration containing corn and crystalline amino acids. The valine requirement under these conditions was 0.4% of the ration or 3.1% of the dietary protein.

Williams et al (1954), using tissue analysis data, calculated the valine requirement of the weanling pig to be 3.9% of the dietary protein.

The requirement of 3.1% of the dietary protein corresponds to 0.5% of a 16% protein ration.

Arginine—It has been shown that the pig requires a dietary source of arginine (Mertz et al, 1952). Weanling pigs fed a purified diet containing 0.20% arginine gained 1.21 lb. per day while those receiving no arginine gained 0.72 lb. Since a total deficiency of other essential amino acids caused either a loss in weight or no change in weight, it is evident that the pig can synthesize arginine at a rate to permit approximately 60% of normal growth. The requirement of arginine is not more than 0.2% of the ration or 1.8% of the protein. This corresponds to 0.3% of a 16% protein ration.

The above requirement is considerably lower than the value indicated by carcass analysis. The requirement calculated from tissue analysis was 4.5% of the protein. This lack of agreement is expected, however, since some arginine can be synthesized by the pig.

Summary of Requirements

A summary of the amino acid requirements of swine is shown in Table 2. The first column shows the requirement expressed as a percent of the protein. The second column is a summary of the requirements given as a percentage of a 16% protein ration. Many of the current feeding recommendations specify 16% protein for weanling pig rations. National Research Council (Beeson et al, 1953c) recommends 16% protein for 50-lb. pigs and 18% protein for 25-lb. pigs. Also included in the table is the amino acid content of a 35% protein hog supplement necessary to meet the amino acid requirements of swine when the supplement is fed with corn in proportions to make a ration containing 16% protein. In making the calculations for the 35% protein supplement, the amino acid content of corn was taken from the table of Sievert and Fairbanks (1954).

Limiting Amino Acids in Swine Rations

In most swine rations, the borderlines or limiting amino acids are tryptophan, lysine and methionine. Amino acid analyses indicate that a tankage or meat and bone scraps ration would be low in tryptophan. The experimental feeding results of Henson et al (1952) and Bloss et al (1953) show that corn-tankage and corn-meat and bone scrap rations are improved by the addition of tryptophan.

All plant proteins except soybean oil meal are deficient or borderline in lysine. Amino acid analyses of 12%, ticularly corn and milo, are low in lysine. Amino acid anlyses of 12%, 14% and 16% protein corn-soybean oil meal rations indicate that they would be borderline or deficient in lysine. Since corn is more deficient in lysine than soybean oil meal, the lower protein rations are more likely to be deficient in lysine. Recent data reported by Pond et al (1954) indicate that 12% or 14% corn-soybean oil meal ration is deficient in lysine; whereas the 16% ration was not. Catron et al (1954) reported that lysine was not deficient in a 14% corn-soybean meal ration. However, lysine supplementation did improve a 12% protein ration. Other reports have indicated the same thing. These data emphasize the need for additional work on amino acid requirements, interrelationships, amino acid contents and their availability in feeds. Any of these could be causing the apparent discrepencies in results reported.

Methionine analytical data indicate that corn-soybean oil meal rations are adequate in this amino acid. However, feeding results have not been consistent in showing the adequacy of methionine in corn-soybean oil meal rations. Dyer et al (1949) obtained a highly significant growth response when 0.2% DL-methionine was added to a corn-soybean oil meal ration which contained no supplemental choline. Using a semi-purified ration with soybean oil meal as the only source of protein, Curtin et al (1952b) conducted two studies where DL-methionine failed to improve a 22% protein ration. There are several factors which will affect the response of supplemental methionine when added to a soybean oil meal ration. The availability of methionine and

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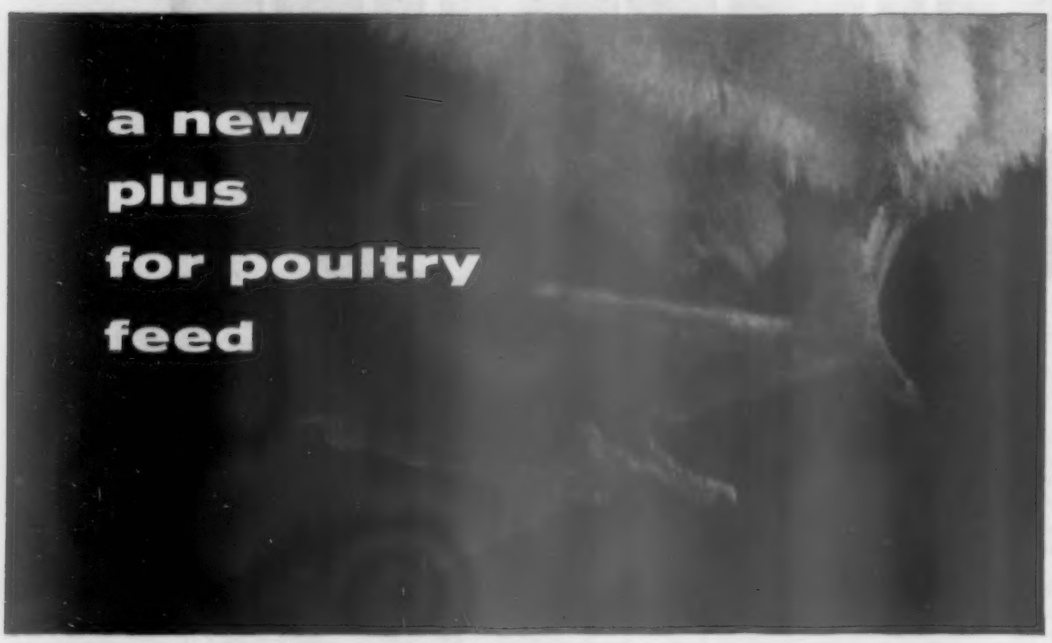

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cystine in soybean oil meal may vary due to differences in toasting during processing of the meal. There are also the interrelationships between methionine, choline and vitamin B_{12} which must be considered.

Peanut meal is quite low in lysine and methionine. Both of these amino acids must be taken into consideration when formulating feeds with peanut oil.

Amino acid analysis of cottonseed meal indicates that rations containing this protein may be borderline in lysine. Also, the availability of lysine in cottonseed meal will be decreased by high temperatures reached in some methods of processing. Kuiken (1952) has shown that the lysine availability in different cottonseed meals ranged from 64% up to 89%. The availability of the amino acid for animal use as well as the total content of the amino acid will affect the feeding results obtained. Results with weanling pigs indicate that properly processed cottonseed meal can replace at least one half of the soybean oil meal in balanced rations (Singletory et al, 1953; Curtin, 1954) with equal or improved results. Since cottonseed meal is lower in lysine than soybean oil meal, this again indicates that the lysine requirement may be either too high or amino acid data on feeds are in error.

These apparent borderline deficiencies in the plant proteins emphasize the importance of proper processing of oil meals to assure maximum availability of the essential amino acids. For both soybean oil meal and cottonseed meal, it is essential that overheating be avoided in order to obtain maximum availability of the critical amino acids (lysine, methionine and cystine). The borderline deficiency of some feeds indicates the importance of using more than one source of protein in swine feeds. It is clear that almost any mixture of three or four different feeds which furnish enough protein would be adequate in amino acid distribution for swine.

Considerable progress has been made in the last five years towards putting the protein requirements on an amino acid basis. We now have quantitative requirements available for all of the essential amino acids. However, some of the values should be accepted as only tenative until confirmed or more reliable figures are reported. Simpler analytical methods for making quantitative amino acid determinations in feeds also will be helpful in translating protein requirements into specific amino acid requirements.

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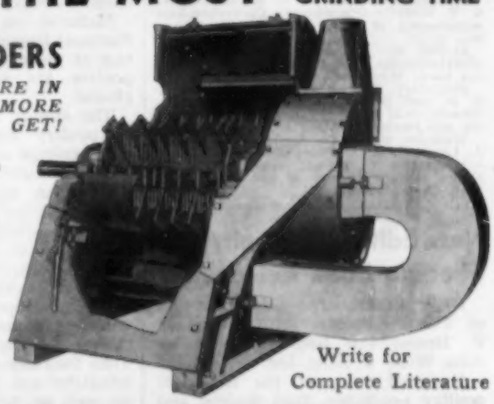

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Penicillin Plays Role in Rumen Flora

Sheep fed hay and concentrates from cobalt deficient soils showed increased rate of gain when penicillin was added to the ration. The penicillin product contained no cobalt. In this experiment it was thought that the penicillin caused some change in the rumen flora which promoted the bacterial synthesis of vitamin B_{12} and contributed to a better utilization of the very small amount of cobalt in the ration.

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It has been reported recently that when 3% or more of bentonite was added to a complete synthetic diet, chicks developed symptoms of vitamin A deficiency. It is thought likely that the bentonite in the diet made the vitamin A unavailable to the chicks either by adsorption or destruction. The symptoms of vitamin A deficiency produced by feeding bentonite were completely prevented by feeding beta-carotene or higher levels of vitamin A.

Bentonite is a colloidal clay often used in pelleted feeds in levels up to 1.5%. Although there is no evidence to indicate these experimental results apply to the low levels of bentonite used in commercial feeds, manufacturers should keep in mind that bentonite levels should be watched carefully and the use of bentonite may indicate a need for supplemental vitamin A.

Worthwhile Reading

Be sure to read the interesting article and progress report entitled "Hemorrhagic Condition" appearing in the March issue of *Feed Age*.

Methionine Called "Miracle" Amino Acid; Essential for Tissue Growth, Metabolism

Cumulative and outstanding results regarding the use and value of methionine have prompted a leading medical authority to suggest that this essential amino acid may in the future be as important as today's "miracle" antibiotics. According to this authority there are few materials, if any, with such unusual diversity in their medical and veterinary applications. Little wonder then that methionine is referred to as the "miracle" amino acid.

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Monogastric animals cannot synthesize methionine and must therefore obtain adequate methionine from

Crystals of DL-Methionine as seen under a microscope.

the diet. Feed manufacturers adding methionine to various rations find increased growth and feed efficiency more than pay for the cost of the added methionine.

The fact that animals can utilize both the D and the L forms, was one of the prime reasons methionine became the first synthetic amino acid to find practical usage in commercial rations. Recent price reductions have made it even more profitable than before to include optimum levels of methionine in manufactured feeds.

Has Many Values

The values and characteristics of methionine have been evaluated after much careful research. Recognized nutritional and medical authorities have found it essential for growth, repair, and proper metabolism of animal tissue. It plays an important role in overcoming adverse effects of stress factors. According to some biochemical studies, methionine . . .

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New Edition of Poultry Feeding Book Released

NEW YORK—The second edition of "Feeding Poultry" by Dr. Gustave F. Heuser has been published by John Wiley & Sons, Inc.

Designed to meet the needs of poultry producers, feed dealers and poultry students, the book presents information gained from authoritative sources on how to employ modern feeding methods. Revised throughout, the book makes generally available much of the new knowledge on feeding developed in recent years.

Material on antibiotics and the National Research Council's new edition of the nutritive requirements of poultry are among the topics included.

The author, Dr. Heuser, professor of poultry husbandry, New York state college of agriculture and the school of nutrition, and poultry husbandryman, agricultural experiment station, Cornell University, has drawn from a wide field of technical journals as well as his own extensive experience at Cornell. Dr. Heuser summarizes and evaluates findings on such important topics as measuring the value of feeds, types of feed that can be used and nutritive economy. Thus the reader is provided with both scientific and practical information, as well as helpful illustrative material, the publisher reports.

The book deals with the feeding and management of chickens for various purposes—chicks, breeders and egg producers. It also presents information on feeding other types of poultry.

One chapter is devoted to health feeding and an extensive section in which principles and objectives are clearly outlined.

Broiler Group Launches Expansion Program

LOMBARD, ILL. — Plans for a broad expansion program will be acted upon by the directors of the National Broiler Assn. Included in the program are plans to hire two full-time men and an enlarged office staff for expanded NBA headquarters in Lombard, Ill.

One of the men will be a full-time executive secretary, who will assume responsibility for the over-all management of NBA affairs. The other will be a coordinator of state relations.

Jodie P. Hall

JOINS JARY—Jodie P. Hall joined the William E. Jary Co. Advertising agency, Fort Worth, Texas, March 1 and has been named account executive for the Burrus Feed Mills, Fort Worth. Mr. Hall was advertising manager for Burrus for the past 1½ years. He has had wide experience in radio, newspaper and television work and formerly headed his own advertising agency in Galveston.

"Good Eggs" Honored At Whitmoyer Banquet

MYERSTOWN, PA. — An added feature of the banquet held for the 62nd class of the Whitmoyer Laboratories, Inc., poultry health and nutrition school, in Myerstown, Pa., was the selection of several persons active in promoting the poultry industry for membership in the well known Good Egg Club.

C. Fred Smith, eastern manager of the Poultry and Egg National Board, who was the guest speaker at the banquet, presented the membership cards and administered the Good Egg pledge to:

Mr. and Mrs. Charles Granger (Mrs. Granger is PENB vice chairman in charge of publicity for Pennsylvania); Walter Shearer, chairman of the PENB finance committee for Pennsylvania; C. W. Whitmoyer, president, Whitmoyer Laboratories, Inc. and a past president of the Animal Health Institute, and Dr. J. R. Wiley, president of the Pennsylvania Poultry Federation and director of the Whitmoyer poultry disease laboratory.

The next Whitmoyer school is scheduled for May 9-11.

Illinois Swine Day Scheduled for April 7

URBANA, ILL.—The annual Swine Growers' Day at the University of Illinois College of Agriculture at Urbana will be April 7. S. W. Terrill, head of the swine division, announces that this year's program has been planned to keep swine growers posted on new practices.

Visitors will tour the swine farm and hear reports on early weaning, creep feeding and swine breeding trials. Swine specialists will also discuss studies comparing pasture with drylot feeding, and also complete rations with free-choice feeding.

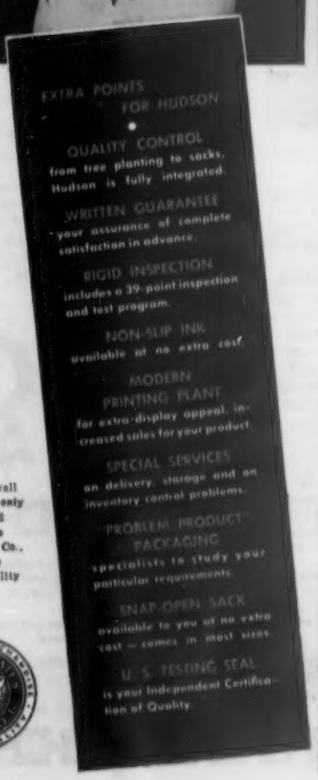
Enough to make the difference...

ANOTHER HUDSON MULTIWALL FIRST!

Photo left: Actual light tracing photo shows how knife blade or pull and tug method of opening wastes time and product.

Photo right: Snap motion opening – saves time and product.

Snap-Open®
MULTIWALL SACKS...


EXTRA POINTS FOR HUDSON
QUALITY CONTROL
from tree planting to sacks, Hudson is fully integrated.
WRITTEN GUARANTEE
your assurance of complete satisfaction in advance.
RIGID INSPECTION
includes a 39-point inspection and test program.
NON-SLIP INK
available at no extra cost.
MODERN PRINTING PLANT
for extra-display appeal, increased sales for your product.
SPECIAL SERVICES
on delivery, storage and on inventory control problems.
"PROBLEM PRODUCT" PACKAGING
specialists to study your particular requirements.
SNAP-OPEN SACK
available to you at no extra cost — comes in most sizes.
U. S. TESTING SEAL
is your independent Certification of Quality.

Hudson Multiwall Sacks are the only bags submitted monthly to the U. S. Testing Co., Inc. to assure continuous quality of product!

Provide Speed, Ease, and Economy

The pull and tug days of opening bags are over! Now you can offer your customers the Hudson Snap-Open Multiwall bag... the one bag that opens the fastest, easiest...with just a flick of the wrist...the one bag that guarantees full measure of its contents no matter how fast it's opened.

Engineered by Hudson to meet the demands of the farmer and processor alike, the Snap-Open Sack outperforms conventional opening bags in actual tests...without a trace of spilling. Here is the answer to speed, ease, and savings...with the built-in feature of flow control.

Dealers everywhere are asking for the new Hudson Snap-Open Sacks. Be among the first packaging your product in this newest bag. Allocations for this sensational selling multiwall are being received now. Available in most sizes, call your Hudson representative today, or write Dept. CP3.

Hudson Pulp & Paper Corp., Dept. CP3, 477 Madison Ave., New York 22, N. Y.

YES... send us information on your Snap-Open Sack and its sales building opportunities.

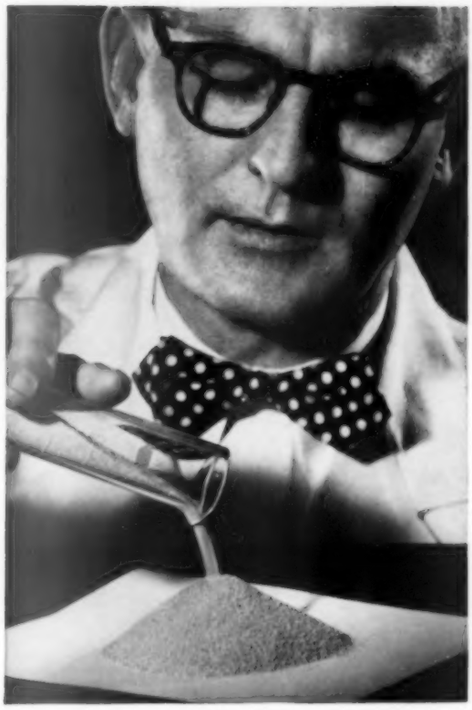
Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

Vitamin Antibiotic
PRE-MIX
"PLUS" for swine, poultry, cattle.
Also custom pre-mixes.
Carroll Swanson Sales Co.
620 Des Moines Bldg., Des Moines, Iowa
Distributors and Sales Agents Wanted
Protected Territories.



Type L Micratized Vitamin A—a fine, dry, free-flowing substance. Completely digestible. Includes money-saving 250,000 units per gram potency.

Pelleting pressures may change the shape or structure of other stabilized vitamin products, thereby affecting their stability, but Type L is unaffected by such physical stresses.

Heat may melt the active portion of other stabilized vitamin products. Type L will not melt or bleed even at high pelleting temperatures.

TAKE A GOOD LOOK AT NOPCO'S TYPE L MICRATIZED® VITAMIN A

It brings genuine vitamin stability to pelleted feeds

It is an entirely new product, made by an entirely new process and offered in potencies of 10,000; 20,000; and 250,000 units of Vitamin A per gram. It is far superior to anything else on the market in resistance to heat and pressure.

Take a look at the texture. It's a fine, dry, odorless, free-flowing meal which will not melt at high temperatures or break down under pressure.

You'll find Type L Micratized Vitamin A the one ideal fortifier for pellets, range cubes, and crumbles. For full information, send for the new edition of the Nopco Nutrition Guide.

NOPCO

NOPCO CHEMICAL COMPANY
Harrison, N.J. • Richmond, Calif.

Nopco Chemical Company,
100 Front St., Harrison, N.J.

Please send me the Nopco Nutrition Guide.

NAME_____

FIRM NAME_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

Easier to mix and sell! Too

Prevent losses

...good feeds that contain

MEGASUL®

Nitrophenide

used continuously

Here's what so many feed manufacturers are saying: "MEGASUL, by our own tests and experience over a long period, has been proved the most effective product for the prevention of coccidiosis losses!" Their own research has convinced them that MEGASUL is better.

Read, on these pages, the many good reasons MEGASUL has long been the *preferred* anticoccidial.

In more than 5 years of use in all the principal poultry-growing areas of the country, MEGASUL has indeed proved itself! This first effective and economical drug for coccidiosis prevention has saved millions of birds for poultry growers—turned what might have been disastrous losses into healthy profits!

If you want to give your customers the *finest* and the *best proved* way to prevent coccidiosis losses—give them good feeds that contain the proved anticoccidial, MEGASUL Nitrophenide.

Cyanamid Fine Chemicals

AMERICAN Cyanamid COMPANY

FINE CHEMICALS DIVISION

30 Rockefeller Plaza New York 20, N. Y.

LET YOUR CUSTOMERS BE SURE WITH THE MOST EFFECTIVE ANTICOCCIDIAL...

MEGA

oday's best proved way to...

s from Coccidiosis

Why more feed manufacturers choose MEGASUL

1 MEGASUL Nitrophenide is a carefully chosen drug!

MEGASUL is the most effective and economical drug now being incorporated in feeds for the prevention of coccidiosis. It was selected six years ago from many thousands of chemicals tested. No drug, among the thousands tested since MEGASUL was selected, has equaled the combined effectiveness and economy of this superior anticoccidial.

2 You can depend on MEGASUL Nitrophenide.

MEGASUL is effective against all types of coccidiosis in chickens. Tests in the laboratory and in the field have proved the superiority of MEGASUL over other anticoccidial agents in preventing outbreaks of both cecal and intestinal coccidiosis. Thousands of poultrymen have used feeds containing MEGASUL continuously for years — with freedom from coccidiosis outbreaks.

3 MEGASUL Nitrophenide provides *controlled immunity*.

MEGASUL slows down the production of oocysts to the correct degree needed to provide the best protection against outbreaks of coccidiosis — and, at the same time, lets chickens develop natural immunity. Your poultry growers can put their replacement flocks on range with maximum assurance that they are immune to coccidiosis.

4 MEGASUL Nitrophenide is stable.

Your feeds containing MEGASUL Nitrophenide will reach your customers with *all* the anticoccidial activity you originally put there. MEGASUL is stable in the premix and finished feeds. Pelleting does not destroy it.

5 MEGASUL Nitrophenide is non-electrostatic.

Unlike many other feed supplements — the active ingredient in the new MEGASUL Nitrophenide blend cannot separate from the carrier and be lost by clinging to the walls of the mixing equipment, or being drawn off in the dust collector.

6 MEGASUL Nitrophenide is safe.

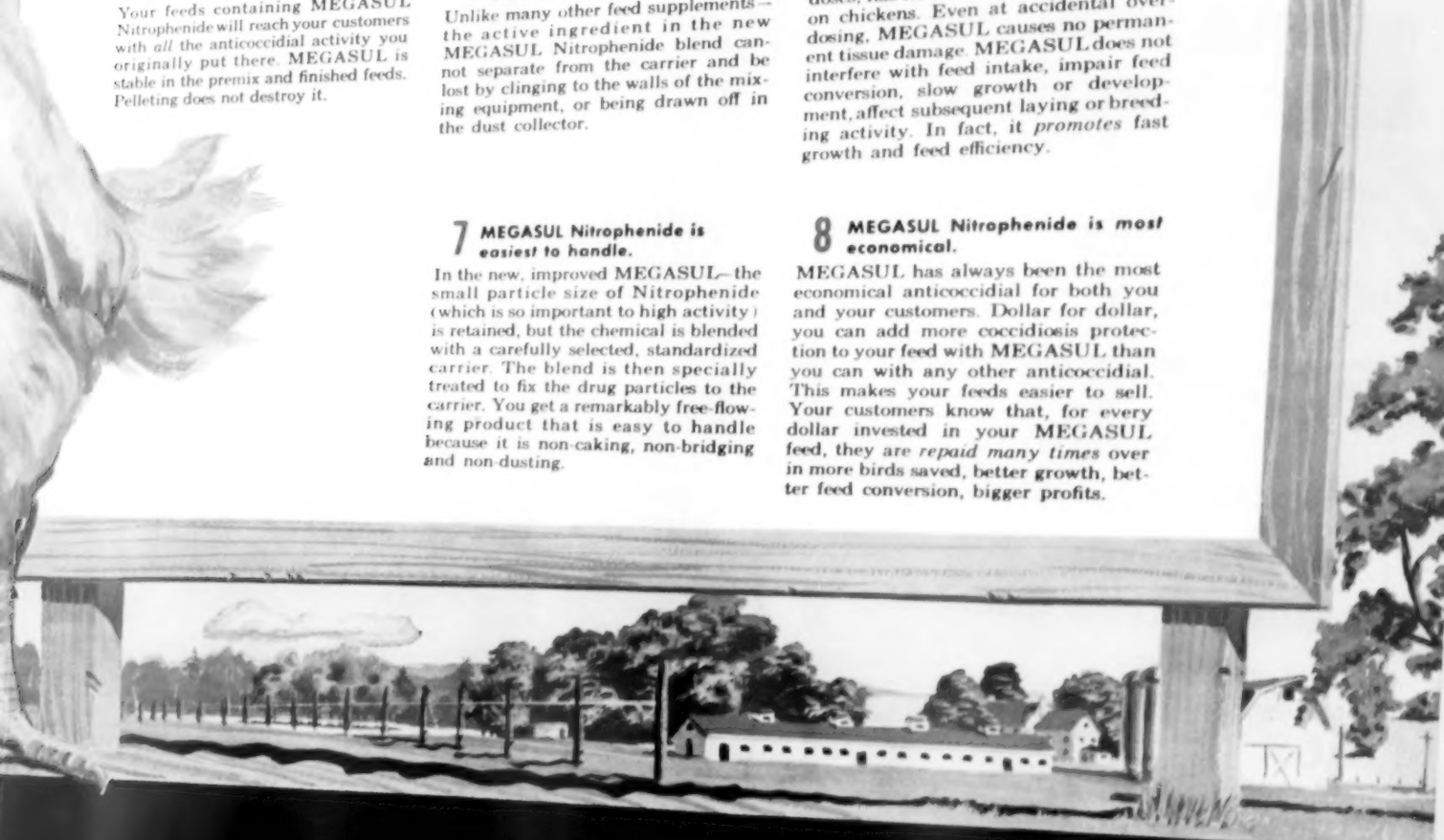
MEGASUL, at the recommended doses, has no adverse effect of any kind on chickens. Even at accidental overdosing, MEGASUL causes no permanent tissue damage. MEGASUL does not interfere with feed intake, impair feed conversion, slow growth or development, affect subsequent laying or breeding activity. In fact, it *promotes* fast growth and feed efficiency.

7 MEGASUL Nitrophenide is easiest to handle.

In the new, improved MEGASUL—the small particle size of Nitrophenide (which is so important to high activity) is retained, but the chemical is blended with a carefully selected, standardized carrier. The blend is then specially treated to fix the drug particles to the carrier. You get a remarkably free-flowing product that is easy to handle because it is non-caking, non-bridging and non-dusting.

8 MEGASUL Nitrophenide is *most* economical.

MEGASUL has always been the most economical anticoccidial for both you and your customers. Dollar for dollar, you can add more coccidiosis protection to your feed with MEGASUL than you can with any other anticoccidial. This makes your feeds easier to sell. Your customers know that, for every dollar invested in your MEGASUL feed, they are *repaid many times* over in more birds saved, better growth, better feed conversion, bigger profits.



ASUL Nitrophenide

Regular Advertising . . .

In Leading Farm Magazines

Informative Articles

In addition to strong Morton advertising, the story of the value of *trace minerals* and salt in feeding livestock and poultry is brought to your customers in articles which appear in farm magazines and in Extension Service reports.

These are mighty useful FREE *sales helps*. Read them, file them in a handy place, and bring them to the attention of your customers and prospects.

All build up demand to help you sell

Morton Trace Mineralized Salt

★ Your customers want it
★ Their livestock need it
★ You'll make more profit

Sell bags or blocks
Use it in feed mixes

MORTON T-M SALT
Trace Mineralized Salt

MORTON SALT COMPANY • Chicago 3, Illinois

RINGING THE cash register

MERCHANDISING HINTS FOR THE FEED RETAILER

Profitable Sideline

One successful feed dealer who was asked recently if he would advise other dealers to follow his example in setting up a seed cleaning and seed treating service had these comments: Ask yourself if there is a need for this service in your trade area? What is the business potential? What is the proximity of the nearest cleaning and treating plant? What type and size of plant would be most appropriate? Remember, this is a seasonal business and it is important that the farmer-customer be served promptly because he is in a big hurry to get his seed and get started planting. What will be the cost of building, maintaining and operating the plant? Is it feasible to transfer help from the feed business to the seed plant when necessary and without disrupting feed operations? Are wider wholesale or retail sales possible? Remember, the $10,000 to $20,000 necessary to get into the seed cleaning and treating business is certain to keep out the intinerant peddlers. A seed plant will bring many new customers into the store. Will the store be prepared to handle and serve them properly? If the answers to these questions come out favorably it is likely that a seed plant will be a valuable and profitable sideline addition to a feed business, this feed dealer explained.

Keep Them Active

Dealers who have succeeded in getting their customers started keeping records on production and profit must encourage them from time to time to keep them at it. Because they do not have as much time during the busy seasons as in winter, farmers often take a dislike to keeping records. But the dealer must keep reminding customers that their records are the only indication of whether their methods are making any money for them. Carefully kept records make one of the best methods of advertising for the dealer. Farmers will invariably discuss these records with their neighbors.

Spring Promotion

One spring promotion which is always certain to draw a lot of attention is a weight-guessing contest tied in with a live display of chicks in the show room window. This inexpensive promotion might be planned for eight weeks and should be well advertised in advance. Announce also in advance the prize or prizes to be given for the closest guess or guesses — perhaps on the total weight of the chicks in the display after eight weeks. A photograph of the awarding of the prize to the winner is almost certain to be accepted by your area newspapers and can be used in ads later. Such a contest makes for valuable publicity. The display should be fully documented—that is, types of feed being used, how much and other pertinent information should be posted prominently in the display.

How to Stay In Business

G. A. Phillips, Cluett, Peabody & Co., Inc., states that two major rules essential to longevity in business are: Quick adaptability to new methods, new materials and new products; and constant research to better present products as well as for new and even dissimilar products.

How to Be Different

One feed dealer put it this way: "I am very much like a bank. I deal in merchandise that is priced pretty much the same all over town. My store looks quite a bit like other stores and all I have to offer that is different is 'me' and my services. I am going to make that 'me' and my services so different that farmers won't think of feeds, farm chemicals and supplies at all—they'll just think of 'me' and my services."

Speechless Salesmen

A display without a sign and price card is like a salesman who can't talk. Neither a display nor a salesman can do business for you if they can't "talk."

Hire a Student

Many feed dealers have solved the problem of arranging displays and changing them regularly by hiring a high school student. The local high school superintendent will be glad to suggest the names of students who have an interest in and talent for making displays and doing lettering. The dealer then selects one of these students and hires him to work on a display once a week or twice a month, whichever he desires. Manufacturers' representatives will be happy to cooperate with the youngster in working out ideas and themes for displays. Dealers have found that for a small sum of money they can create effective displays at a low cost for labor and materials.

R. Frank Frazier

HEADS COUNCIL—R. Frank Frazier, executive secretary of the Southeastern Poultry & Egg Assn. and the Virginia State Poultry Federation, has been granted a leave of absence to head the staff for the recently-founded National Broiler Council, Richmond, Va. Mr. Frazier's position will be executive vice president of the council, which will promote increased sales of broiler chickens nationally. J. Paul Williams, editor of the Southeastern Poultryman and the Virginia Poultryman for the past 4½ years, will serve as acting executive secretary of the Southeastern and Virginia associations.

Wyoming Passes Feed Registration Law

CHEYENNE, WYO. — Gov. Simpson of Wyoming has signed into law a bill requiring registration of all formula feeds, including feeds containing minerals and medicants.

Construction Underway On Illinois Feed Plant

SPRINGFIELD, ILL.—The framework of the Illinois Farm Supply Co. feed plant near here has been completed. The plant, which will cost an estimated $1,500,000, will also include a warehouse, garage and office building, according to Will Brooks, director of feed manufacturing for the company, a subsidiary of the Illinois Agricultural Assn.

A. E. Staley Names Indiana Area Manager

DECATUR, ILL.—The appointment of Rex Ransom, Danville, Ind., as central Indiana territory manager for the formula feed department of the A. E. Staley Manufacturing Co. has been announced by Clyde W. Thompson, formula feed sales manager.

Mr. Ransom was formerly a sales representative for Pillsbury Mills, Inc., in central Indiana.

Operating efficiency begins with basic plant layout. You'll like the way Ibberson works with you, applying the know-how of 70 years of experience to arrive at the most practical and economical plan to fit your particular requirements.

Hubbard Milling Co.
Feed Plant, Marion, Ind.

FOR ECONOMICAL OPERATION

T. E. IBBERSON COMPANY
Engineers and Contractors — Minneapolis, Minn.

You Can Count On

CALCIUM CARBONATE COMPANY — TRIPLE CCC QUALITY — PRODUCTS

- Leadership Research
- Quality Control
- Outstanding Facilities
- Quick Service

Trace Mineral Premixes . . . Iodized-Manganesed Calcium (any desired level) . . . Manganesed Calcium (any desired level) . . . Electro (free-flowing) Calcium . . . Pellet Machine Calcium . . . Regular (plain) Calcium . . . Dustless (plain) Calcium . . . Shellmaker Calcium Grit . . . Farm-Cal (Barnlime)

Write—Wire—Phone

Calcium Carbonate Co.

CHICAGO 6, ILL. 222 W. Adams — CARTHAGE, MO. Box 409 — OMAHA, NEBRASKA 325 W.O.W. Bldg.

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

"If the Skies Fall, One May Hope to Catch Larks"

But when you order Multiwalls from the completely integrated Albemarle operation you do not have to depend upon *miracles* for superbly printed, superbly made sacks in *any* quantity you desire.

FOR Multiwall CALL Albemarle

ALBEMARLE PAPER MANUFACTURING COMPANY • RICHMOND, VIRGINIA

EASTERN SALES OFFICE: NEW YORK CITY • SOUTHERN SALES OFFICE: BALTIMORE, MD. • MIDWEST SALES OFFICE: CHICAGO, ILLINOIS

Worth Looking Into

New Products
New Services
New Literature

This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

No. 5124—Seed Treating Film

Panogen, Inc., has available a film on seed treating for showing by dealers or agricultural workers to farm groups. The film is entitled "Red Seed." To secure more information about the film check No. 5124 on the coupon and drop it in the mail.

No. 5128—Whey

Pab-O-Lac, a condensed whole whey for free choice feeding to chickens and turkeys, is the latest addition to the line of the Blatchford Calf Meal Co. The product is offered in three types: 55% milk solids, 62% milk solids, and 72% milk solids. The 55% is natural color and the 62% and 72% milk solid types are colored green. The product is packed in 50 lb. blocks in weather-resistant cartons that can be slit open and left in the feed yard for free choice feeding. Further information may be obtained by checking No. 5128 on the coupon and mailing it to this newspaper.

No. 5127—Transparent Plastic Hover

A transparent plastic hover designed to reduce heating costs has been introduced by the E-Z-C Hover Co. The hover is designed for use with infra-red heat lamps and the manufacturer claims that tests have shown that 60% of the heat normally lost is conserved under the new hover. It is made of durable, fire-resistant plastic and can be folded up and put away when not in use. For more information, check No. 5127 on the coupon and return it to this newspaper.

No. 5126—Moisture Tester

Arrangements have been completed by the Seedburo Equipment Co. with Accurate Farm Moisture Testers, Inc., whereby Seedburo will market a new moisture tester, shown here. The tester uses a distillate method of testing and results can be obtained from any grain in 15 minutes, it is claimed. It is a valuable supplement to electronic testers and is expected to have widespread use in feed and seed stores, country elevators as well as on farms, Seedburo officials said. To secure more complete details check No. 5126 on the coupon and mail it.

No. 3663—Small Fork Trucks

"Why the Small Fork Truck?" is the title of a new, illustrated, 28-page treatise written by Nathaniel Warshaw, manager of the materials handling division of Market Forge Co. It is available without charge in its second limited edition. The treatise describes how a small power fork truck can be used in upper story installations and for loading and unloading motor trucks, where floor or spring capacities make it impossible to use heavy fork trucks. It illustrates in simple language and graphic pictures and diagrams, the basic design principles of power fork truck construction. Such topics as aisle and pallet sizes, stacking and capacities are included. To secure the publication check No. 3663 on the coupon and drop it in the mail.

No. 3681—Rubber Mat

A new mat series called Shad-O-Rug, cross-rib runner and tile runner has been announced by the Wear Proof Mat Co. Raised ribs offer exceptional safety and reduces worker fatigue, the maker claims. The series comes in rolls 48 in. wide and up to 60 ft. long. The cross-rib runner is also available in 36 in. width. For more details check No. 3681 on the coupon and mail it.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feeedstuffs.

No. 5087—Mixer brochure, Rapids Machinery Co.

No. 5088—Cushioned rubber mats and runners, Flexi-Mat Corp.

No. 5089—Feed additive, Dr. Salsbury's Laboratories.

No. 5090—Lift truck operation, Hyster Co.

No. 5091—Heating tape, Miller Manufacturing Co.

No. 5092 — Antioxidant, Eastman Chemical Products, Inc.

No. 5093—Catalog of poultry and hog supplies, Brower Manufacturing Co.

No. 5094—Bagging scale, Richardson Scale Co.

No. 5095—Mixer booklet, Prater Pulverizer Co.

No. 5096 — Viscosity conversion chart, Nopco Chemical Co.

No. 5097 — Blackhead treatment, American Cyanamid Co.

No. 5098—Slide films on feeds, Chas. Pfizer & Co., Inc.

No. 5099—Bagging machine, Union Bag & Paper Corp.

No. 5100—Feed Processing unit, Barnard & Leas Manufacturing Co., Inc.

No. 5101—Water dealkalyzing publication, Cochrane Corp.

No. 5102 — Poultry peck valve, Thompson's Peck-A-Drink Poultry Valve.

No. 5103—Rotary air lock (valve), Pulva Corp.

No. 5104—Bottle type air sprayer, Spraying Systems Co.

No. 5105—Storage rack for drums, Star Welding Co.

No. 5106—Conditioning ovens for moisture determination, Precision Scientific Co.

No. 5107—Supplement guide, Animal Nutrition Dept., U.S. Industrial Chemicals Co.

No. 5108—Materials handling equipment leasing, Barrett-Cravens Co.

No. 5109—Urea feed compound, Grace Chemical Co.

No. 5110—Poultry treatment, Whitmoyer Laboratories, Inc.

No. 5111—Rodent bait and dispenser, Donco, Inc.

No. 5112—Pig feeder, Rhinehart Manufacturing Co., Inc.

No. 5113—Molasses blender, Jacobson Machine Works.

No. 5114—Bagging scale, Richardson Scale Co.

No. 5115—Feed Booklet, Myers-Sherman Co.

No. 5116—Vitamin A, Nopco Chemical Co.

No. 5117—Resin coating, Pennsylvania Salt Manufacturing Co.

No. 5118—Temperature controller, Fenwal, Inc.

No. 5119—Slurry adapter, Panogen, Inc.

No. 5120—Box car door puller, Lug-All Co.

No. 5121 — Electrical floor-level platform scale, Baldwin-Lima-Hamilton Corp.

100 Poultrymen Tour Stone Mountain Plant

LITHONIA, GA.—Over 100 poultry producers and processors from a dozen southern states recently toured Lithonia, Ga., as guests of Stone Mountain Grit Co.

Express buses brought the visitors for a tour of the Davidson's Big Ledge and Pine Mountain Quarries, the Stonemo plant and a sight-seeing trip which included Stone Mountain. These visitors, all delegates to the eighth annual convention of the Southeastern Poultry & Egg Association in Atlanta, were given souvenirs commemorating the 25th anniversary of Stonemo.

Western Poultry Meeting Will Stress Efficiency

SAN DIEGO, CAL. — Ideas that egg producers, broiler raisers, turkey growers and hatcherymen can use to increase efficiency and profits will be presented at the Western Poultry Congress to be held in San Diego June 22-24.

Panel discussions on the replacement rate for caged layers, the problem of the disposal of the laid-out layers, how fryer costs can be reduced, turkey management practices, and mass vaccination methods are among those scheduled, according to Merton D. Butler, Santa Ana, Cal., program chairman.

Lynn Sanborn, farm advisor of Los Angeles County and winner of the Poultry Science Association's extension award in 1954, will discuss "How Ranch Testing May Step Up Your Profits." Many nationally prominent industry leaders will appear on the program.

Send me information on the items marked:

- ☐ No. 5124—Seed Treating Film
- ☐ No. 5126—Moisture Tester
- ☐ No. 5127—Plastic Hover
- ☐ No. 5128—Whey
- ☐ No. 3663—Small Fork Trucks
- ☐ No. 3681—Rubber Mat

Others (list numbers) .....

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS PERMIT No. 2 (Sec. 34.9, P. L. & R.) MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Feedstuffs

P. O. Box 67,

Reader Service Dept. Minneapolis 1, Minn.

FEEDAROMA
Smells good!
Tastes good!
Sells good!
LOW IN COST
write
FLAVOR CORPORATION OF AMERICA
3037 N. CLARK ST., CHICAGO 14, ILL.

OUTSIDE SELLING PAYS

By Edward Case

Changing business conditions are altering the merchandising policies of many feed dealers, salesmen and manufacturers. In fact, the stirring of the competitive angle in the retail feed business is raising the level of selling in many areas.

Formerly, when the farmer received good prices for almost everything he raised and sold, there was not too much need for extra selling effort by dealers, because the farmer bought more feeds voluntarily and didn't complain about prices. If the farmer hesitated a little about buying, the dealer could do a little selling right at the mill as the farmer came in to buy, and often he bought.

But since some farm prices have slumped, the farmer does not buy so readily. He studies the value of everything he buys. This has caused the feed dealer and manufacturers' salesmen to get OUTSIDE the feed mill to sell. Manufacturers have stepped up their advertising campaigns, have trained feed salesmen better, and have provided many dealer help programs. All are keyed at getting more sales.

This effort is paying off. Recently a prosperous feed dealer said, "The salesman for my chief account has been after me for the past six months to go out into the territory with him for one to two days visiting feeders," he said. "I always hated to give up that much time because I was busy at the mill and was doing lots of business that way. Often I had to give the salesman some names of feeders and let him call on a few himself.

Some Pleasant Surprises

"However, now that one has to scratch a little harder for business I have been going out with that salesman, and I have received quite a few surprises. The first is that farmers like to see us, like to talk over their feed problems with us better at the farm than the mill. I have learned many things about modern farming I had not caught up with before. And I have gotten more business from regular feed customers by these calls, and also opened some new accounts, too. I am sold on this resale work—especially with a salesman. I'm going out with him now whenever he comes. I look forward to his visits."

There you have one dealer's reaction to a situation. Competition forced him to get into the field and work hard at outside selling. Now he can see the advantages of it.

Another dealer told me, "I have been able to sell a lot of related lines just by going around talking feed problems with farmers. When I get into hen houses I see they need new or additional poultry and ventilating equipment. I suggest it, and often sell some. The same is true of barn equipment and milk house supplies. I now have a better picture of the actual farm and feed conditions of each customer. They are glad to see me and talk over their problems."

A southern Iowa dealer told me last year he went from farm to farm trying to sell seed corn. It was the first time he had ever tried to do this selling in advance. He says that he sold 350% more seed corn than the previous year by this method. "I beat out the itinerant seed corn peddlers, especially the retired farmers who used to do this work in spare time."

In still another instance a feed dealer said that he sold over 200% more fertilizer when he went out in the fall of the year booking it for spring delivery. "Farmers seemed very willing to book orders when I came and talked to them about it," he said, "but they never would have come to me at the mill and given me orders that far in advance. You've got to call those things to their attention personally."

The feed dealer is not the only retailer who has discovered that a wonderful place to sell products and

shellbuilder

PURE CRUSHED REEF OYSTER SHELL

it's naturally better

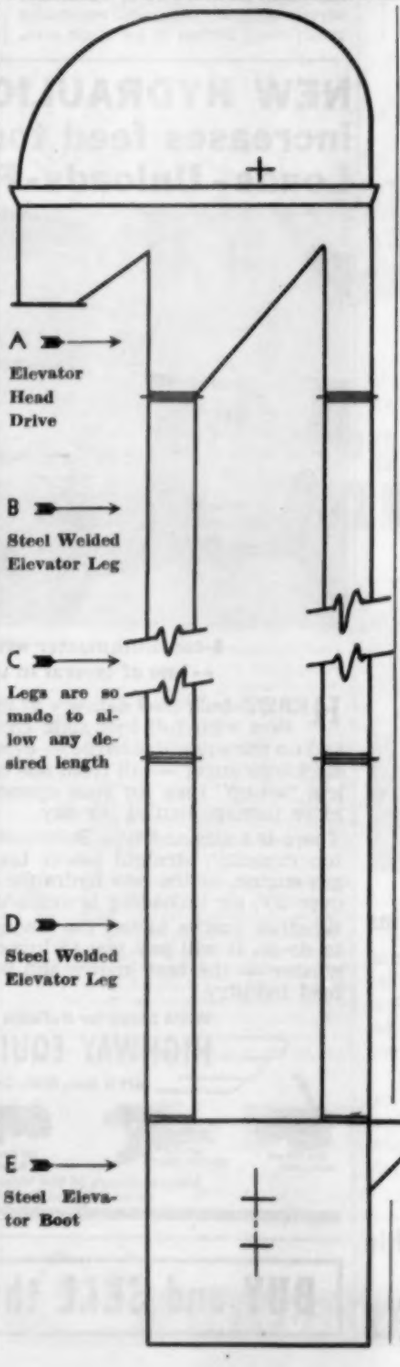
SHELLBUILDER COMPANY

MELROSE BUILDING • HOUSTON, TEXAS

Advertisement

NEW PRODUCT NEWS

New STRONG-SCOTT ELEVATOR LEGS ARE STANDARDIZED FOR ALL CAPACITIES!



Modern Construction Reduces Dust Problem — New Boot-Shaft-Seals Eliminate All Leakage!! Revolutionary Welded Leg Construction Controls Dust

Modern production methods used in the manufacture of Strong-Scott steel elevator legs have solved many material handling problems. Compressive strength and installation tests have proven—the simplicity of installation, the reduction of lost space, the convenience of maintenance, the tight construction — that greatly reduces the dust problems and eliminates all leakage around the boot shaft — PLUS adequate strength to withstand the highest capacities **without** failure.

These are just a few of the modern construction features now incorporated in the manufacture of the Strong-Scott Elevator Legs.

Steel welded elevator legs are now standardized and stocked for every installation purpose. The new, modern design will allow capacities up to 20,000 bushels PER HOUR. New elevator heads allow additional clearance to reduce wear and back-legging of material. Liberal head clearance is vital to an economical operation and adds to the reduction of material loss.

Special synthetic seals on the boot shaft eliminate the age-old problem of material loss from leakage and when combined with the tight, steel welded construction of the elevator legs, it greatly reduces the irritating dust problem!

The Strong-Scott Mfg. Co. has available a stock-pile of standard elevator legs and accessories.

Modern Design Allows Capacities Up to 20,000 Bushels Per Hour!

These complete unit legs are fabricated, designed and built to insure long and satisfactory service on the job. Workmanship is exact—so component parts fit correctly, eliminating excess installation time. The heads and boots are constructed to meet high volume operation of the leg.

These standard steel elevator legs are engineered with the greatest skill—and then produced by the most modern method in the world. Welding has taken the place of the bulky rivets and the method used to mass produce these elevator legs is ingenious! Strong-Scott now has a stock-pile of elevator legs available in a variety of capacities, ranging from 850 to 5,500 bushels per hour. Custom installation legs are also available on request for capacities up to 20,000 bushels.

Side view of elevator leg showing welded construction method now used.

In the illustration, note the welded edges—the absence of the rivet—the smooth, modern design. Steel, welded construction makes the difference.

In standard installation, heads include drilled bridge trees for bearings and are extended where required for drive mounting. Split removable hoods are another feature for easy accessibility. Trunk sections are self-supporting and two-sliding inspection doors are included in each leg.

Elevators can be made-up in either bent leg or straight leg construction depending on installation requirements.

Trunking sections have steel angle connecting flanges far superior to the self-flanges often found on other types of leg construction.

H.P. Requirements

For maximum service and satisfaction the Strong-Scott direct connected geared head drives are recommended for all legs requiring 5 H.P. or more. On smaller legs the style C head drive is recommended.

Top Grade Friction Belts

Leg belts are top-grade Strottco Rubber Belts or friction surface. Where wet pits or other moisture hazards are a factor, however, rubber covered belts are preferable. In such cases the Strottco Square Edge Rubber Covered Elevator Belts can be supplied at a modest additional charge. Both types of leg belts are the finest quality material and guaranteed against defects in workmanship. They are manufactured to last a life-time under the most hazardous operating conditions.

The STRONG-SCOTT MFG. CO.
451 Taft St. N.E.
Minneapolis 13, Minn.

service is right at the home and the farm. I know a small town appliance dealer who put in some model kitchens and offered a kitchen planning service. Because he was a hard worker and friendly, and because he did considerable advertising, he managed to sell on the average of three sizeable kitchen jobs per month to store traffic that came in and saw what he had to offer.

However, when this dealer started to get out and call on people in their homes—people whom he he thought should be interested in model kitchens his sales eventually went up to nine model kitchens a month. This was a tremendous increase—all due, he says, to outside selling.

Bulk Items Require Harder Selling

Feed dealers today have the widest and best varieties of farm merchandise to sell to farmers, and it requires a great deal of outside selling to make the most of that opportunity. Many of the items the feed man has for sale are bulk or big items that run into large volume. Farmers do not buy these big articles solely on impulse. You've got to be patient and work hard on a new feed customer before he will switch to you and your brand of feeds and spend $1,000 or $2,000 or more per year at your feed store or mill.

Likewise, you must do considerable selling to sell a milking machine, farm freezer, water system, dairy equipment, poultry and barn equipment and many other things. But farmers have need of such merchandise and you can sell them and more feed, too, by going to the customer when he won't come to you.

Always remember there are some customers who like to come to a mill to buy feeds and other items. They'll buy and truck home all their purchases. Other customers want you to deliver. A sizeable number of customers, too, want YOU to come and try to sell them at their farms.

The feed dealer who recognizes these differences in farm customers has taken his first step in a sales and service program which will eventually reach every farmer in his trade area.

Lederle Releases Three Films on Poultry

PEARL RIVER, N.Y.—Three new motion picture films on poultry diseases have been prepared by Lederle Laboratories Division, American Cyanamid Co. The films: Respiratory Diseases in Poultry, Intestinal Diseases in Poultry and Tom Turkey-All American are in 16 mm. color, sound or silent, and are designed as descriptive films documenting symptoms of the more common poultry diseases. They demonstrate that early recognition and effective methods of prevention and control are essential to successful poultry management. Average running time is approximately 11 min. for each film.

The films are available without charge to interested institutions and organizations. Written application should be made at least three weeks in advance to: Film Library, Lederle Laboratories Division, American Cyanamid Co., Pearl River, N.Y.

Corn Products Sales Co. Promotes H. M. Mays

W. H. Gamble, president of Corn Products Sales Co., has announced that H. M. Mays has been appointed manager of the company's feed division.

Mr. Mays joined Corn Products Sales Co. in 1947. He was appointed assistant manager of the feed division in June, 1950.

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Look at the load carried by these four NEFF & FRY Bins

All of the bridgework, with machinery, atop these bins is carried by the silos themselves without extra supports. What's more, the four bins, if filled, can hold about 3,000 tons of coal.

This strikingly proves the load-bearing strength of NEFF & FRY storage bins, which is due to the design and stamina of the Super-Concrete Staves in the walls.

Our bins are used in the industrial areas of North America for handling and storing a great variety of flowable bulk materials, the most frequent being alumina, cement, clay, coal, ore, lime, grain, sand, and wood chips.

The facts about NEFF & FRY bins are briefly told in our interesting folder, "Bins With the Strength of Pillars." A copy is yours for the asking without obligation.

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NEW HYDRAULIC BULKMASTER increases feed tonnage because it Loads - Unloads - FASTER, EASIER

8-ton Bulkmaster with high vertical auger -- one of several in use by General Mills.

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There is a size and type Bulkmaster for every need — from 3 to 20 ton capacity; straight power take-off mechanical drive, separate gas engine, or the new hydraulic operation. For discharge heights over 20', air unloading is available.

Whether you've joined the 'swing toward bulk' or making plans to do so, it will pay you to investigate the NEW LEADER Bulkmaster — the best known and most widely accepted name in the feed industry.

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How to Get Best Performance From Elevator Conveyor Belts

By A. F. Matheis

Assistant Vice President
Thermoid Co., Newton, N.J.

Properly selected, installed and maintained, the elevator conveyor belt with buckets is one of the wheelhorses of bulk materials handling. A versatile, compact, easily-integrated connecting link, this type of conveyor offers engineers great flexibility in solving materials handling problems. Continuous in operation, the unit fits in with and maintains or improves the efficiency of continuous systems. It occupies little floor space; adapts easily to out-of-the-way places—against a wall, for example.

But to take fullest advantage of the benefits which these units can bestow, a few simple rules for selection, installation and maintenance must be observed.

Selection

First-rate performance of the elevator conveyor belt hinges on proper allowance for such interdependent factors as material to be conveyed, height, bucket spacing, belt speed.

Material to be conveyed will determine choice of elevator type (boot loading or continuous bucket), bucket shape, size and spacing, kind of bucket. For instance, a material that is light, soft and finely ground can be handled by large buckets, closely spaced, made of light-gauge, inexpensive metal. Material of these specifications will fill each bucket nearly to capacity. If the material is corrosive, a corrosion resistant bucket shodul be used.

The centrifugal discharge or boot loading elevator (see Fig. 1) is best suited to free flowing materials although lumpy materials up to 3-in. diameter often are handled. The unit is usually vertical and the buckets are filled by "digging from the boot."

On the other hand, heavy, hard, lumpy materials are usually best handled by continuous bucket elevators which are fed directly from a loading chute. To facilitate loading and discharge, these elevators usually are inclined, the belt being supported on the up-run by flat carrier pulleys. In discharge, the bottom and sides of the bucket ahead form an auxiliary discharge chute for material from the bucket above. The buckets must be large and wear-resistant.

Height the material is to be raised should not, in general, exceed 75 to 80 ft. because of the danger of swaying.

Bucket projection should be watched and kept as small as possible consistent with good capacity. The farther the bucket extends out from the belt, the greater the stress on the bolts holding the bucket to the belt and the greater the possibility of the bolts pulling out. Thus, the extent of bucket projection also affects belt thickness—the greater the

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50 Years have changed a lot of things!

...including DUST CONTROL

To merely say, "Times Have Changed," regarding the stereoscope of Granddad's day and the TV of today would surely be an understatement. *Times Have Changed . . .* so have industry's methods.

Dust control methods have changed drastically during the past few years and we have played our part in changing them with a new concept, a new design in dust filtering. The DAY High Pressure, Reverse Jet Dust Filter manufactured under DAY and Hersey patents is a real departure from "yesterday's" type filter. The DAY advanced type Dust Filter is progress for industry. It saves valuable plant space because it requires a smaller unit to handle more dust laden air. It saves valuable time because it is pre-assembled at the factory and installation time is cut to a minimum. New facts about modern dust filtering are fully disclosed in a folder which is free to you. Write toDAY for Bulletin 528R.

THE DAY "AC" FILTER, using high pressure, reverse jet cleaning was introduced in 1949. This reverse jet multiple small tube filter brought to industry such advanced features as—square-to-round streamlined dust laden air inlets and multiple screw conveyor discharges. In 1954 DAY introduced the most important feature of reverse jet filters, the DAY Self-Adjusting Cleaning Ring. This cleaning ring makes better contact with the unstable filter medium to provide maximum cleaning efficiency with minimum filter wear. No other blow ring can clean filter tubes as effectively as the DAY Self-Adjusting Cleaning Ring.

DAY High Pressure Reverse Jet Filtering has been used by leading companies for 5 years. 87% of DAY Filter users have ordered additional DAY Filters. The DAY organization is nation wide and ready to serve you and counsel you on any dust problem. Write for our Bulletin 528R.

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5. Outwears, outlives ordinary buckets.

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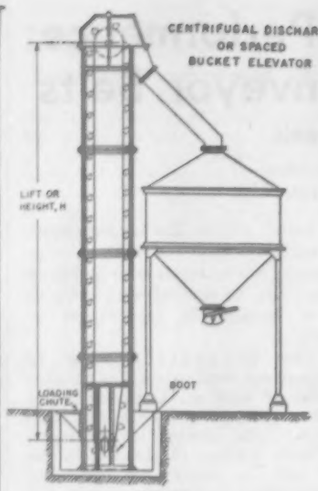

FIG. 1

leverage on the bucket bolt heads, the more plies are required to keep the bolts from pulling through. (See Fig. 2).

As for bucket spacing, the closer the buckets are placed to each other, the greater the capacity of the belt for equal speeds. However, also increased are the load on the belt and the number of bolt holes which weaken the belt. If buckets are set too close together, a belt of such thickness may be required to support the load that either excessively large diameter pulleys will in turn be required or the belt will be short-lived from over-flexing over a normal-sized pulley. (See Fig. 3).

The problem of loading and discharging the buckets may be troublesome with certain types of materials. Discharge pattern may often be improved by a faster moving belt that will throw the material clear of the bucket. Belt speed also affects belt capacity and thickness.

Method of installation is the second crucial step; it should supplement, but it could cancel out, the good results gained by optimum blending of selection factors. During installation, attention must be given to proper splicing, alignment, loading, tension, safety devices and pulley lagging.

Maintenance and Repair

Since operating conditions are often more severe than anticipated and accidental damage occurs more often than many users realize, regular attention is more than justified to guard elevator installations against unnecessary wear and preventable damage. Inspection should be made at least once a week for loose bucket bolts, worn washers, faulty splices, buckets, belts and pulleys. Housings and foot pulley protectors should be constantly adjusted, accumulations dislodged. Anything which might snag the buckets while the belt is in operation must be detected immediately.

And any belt damage, no matter how slight, should be repaired immediately. Belt fabric in the carcass exposed to weather or damp atmosphere will absorb moisture and may even become soaked if the protective cover becomes damaged. In warm weather, this condition leads to mildew and rot; in winter, ice crystals form and gnaw at the fabric from within as the belt flexes. Hence, immediate repairs not only prevent the spread of damage, but also keep out the water which is the natural enemy of the carcass of conveyor belts.

An adequate repair kit includes: sharp cobbler's knives and a stone to keep them sharp, a supply of emery cloth, rubber cement, inner-tube patching rubber, rip-plates, standard belt fasteners and accessories, rags and cleaning fluid. As each belt is installed, remnants should be kept for they will prove useful in subsequent repairs.

Fasteners and rip-plates lend themselves to quick repairs when a deep cut or tear occurs. For smaller breaks in the cover, a piece of remnant cover-stock may be cemented over the break to keep out moisture and

Advertisement

FEED For THOUGHT

Caveat Emptor?

All the claims and counter-claims, printed and spoken, in the vitamin, antibiotic, and mineral fields today often bewilder even the most experienced nutritionist. One wonders if this old Roman warning, "let the buyer beware" shouldn't be before the eyes of every buyer.

Whose "stable" dry vitamin A product is superior under all practical conditions? Is "stabilized" vitamin A oil superior to regular A oil? Is there a satisfactory stable D? Are these special sources of unidentified growth factors as uniform and as effective as claimed? Is penicillin equal to chlortetracycline or oxytetracycline for swine or in high-antibiotic feeds for treatment of CRD, etc.? Is one source of penicillin more stable than another? Are vitamins and antibiotics stable in a premix? Is an antioxidant economically desirable in a feed? Is a certain brand of defluorinated phosphate or dicalcium phosphate consistently more available biologically than another? Who is right about colloidal phosphate? Ad infinitum.

The purchasing agent and the nutritionist are sometimes confused and rendered wary by the variations in prices quoted. Price lists are often meaningless. Suppliers resort at times to bargain-counter quotations so low as to arouse suspicions as to soundness and ability to deliver to specifications. Supply of vitamins, antibiotics and phosphates exceeds demand, hence the fierce competition for customers. Whom should the buyer patronize?

Obviously, no feed manufacturer has the personnel, facilities, or funds to test all the products offered to him. It is the responsibility of the supplier to provide adequate objective data, substantiating his claims, for the buyer's nutritionist to examine critically and objectively in detail. Experimental conditions should be properly controlled and be applicable to the feeds in which the product is to be used and under the range of conditions encountered in manufacturing, storage, and usage of feeds. Tests should be replicated sufficient times with enough production samples of the product to provide evidence of reliability and uniformity.

Above all, the supplier must possess integrity, reliability, and a sincere feeling of responsibility to provide products that will justify his claims—truth and sincerity in advertising—never caveat emptor.

H. S. Wilgus

Dr. H. S. Wilgus

PETER HAND FOUNDATION
1000 W. North Ave. Chicago 22, Ill.

Fig. 2

Minimum Plies for Various Bucket Projections

Note: The leverage on the bucket belt heads, due to the digging action and the load, increases with greater bucket projection, so that more plies are required to keep the belts from pulling through.

Materials Carried, Type of Service, Maximum Lump Size	Bucket Projection in Inches 3	4	5	6	7	8	10	Belt Fabric
For Centrifugal Discharge or Spaced Bucket Elevators Minimum Belt Plies								
Light, Free-Flowing Materials Low Speed Grain Elevators	4	4	5	5	6	6		28 oz. or 32 oz.
High Speed Grain Elevators				5	6	6		32 oz.

dirt until more permanent repairs can be made.

To mend long and deep cuts which go through to the fabric, open the cut, clean out all the dirt, and cement the cut closed, allowing the cement to dry thoroughly before the belt is restored to service.

Where bits of torn cover leave exposed parts with only slight damage to the fabric, remove the loose ears of cover-stock by carefully cutting a curved and bevelled edge around the spot. Then sand edges, apply cement, allow to dry, apply tire patching rubber and finally skive the patch flush with belt cover.

Gouges which have penetrated the belt, or longitudinal rips must be cleaned, sanded, cemented, and reinforced with rip-plates at three-inch intervals.

Transverse rips require similar treatment with standard belt-fasteners instead of rip-plates. Use rip-plates on longitudinal rips only, standard fasteners on transverse rips only.

When holes do not permit use of rip-plates, and fasteners, cut out the hole into the smallest possible rectangle, with its sides parallel to and at right angles to the belt edges. Then, from belting remnants, cut an exact fit for the hole, cementing all edges thoroughly, and insert, securing it with belt fasteners all around the patch.

Vulcanized patches have greater flexibility, strength and permanence than those described above. In preparing a vulcanized patch, work down into the damaged belt as far as necessary by removing progressively smaller blocks of fabric with each successive ply to depth required by the injury. When the patch goes through the belt, work in through bottom ply, just as from the top ply, to meet work from top inwards. Clean, roughen and cement the cavity, fit in blocks of new fabric and, finally, apply the uncured cover. Skive edges of patch flush and vulcanize.

Such patches cannot be made successfully unless the belt is dry because presence of moisture will permit development of internal steam blisters.

Only users of large amounts of conveyor belting will find it necessary to vulcanize their own belt patches. Small users can arrange with belt manufacturers, local firms or neighboring large users for vulcanizing service when required.

Fig. 3

Maximum Plies for Standard Pulley Diameters

Head Pulley Diameter	Maximum Plies	Minimum Foot Pulley Diameter (approx.)
20"	5	16"
24"	6	18"
28"	7	21"
30"	8	22"
36"	9	26"
42"	10	30"
48"	12	36"
54"	13	40"
60"	15	42"

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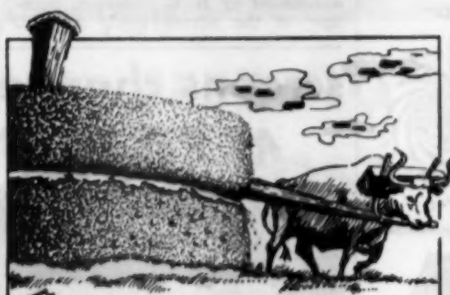
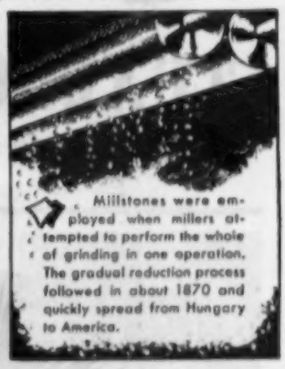
THE STORY OF GRINDING!

Pre-historic grinding consisted of crushing grain between stones. The subsequent pounding of grain with a round stone against a flat rock led to the saddlestone mill of ancient Babylon.



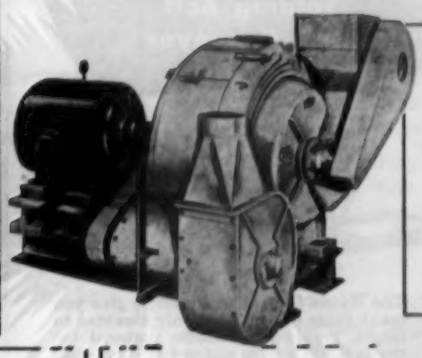
A mill, whose upper stone revolved over a flat bed, was introduced in the 3rd century B. C. This "quern" was at first powered by slaves or convicts, but later animals were used to pull the stone.

Water power became popular with the development of the windmill. In 1786 James Watt provided a new source of power when he invented the first flowmill run by steam.

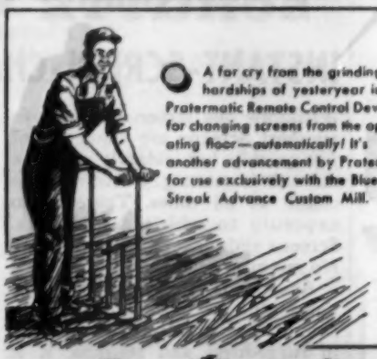


Millstones were employed when millers attempted to perform the whole of grinding in one operation. The gradual reduction process followed in about 1870 and quickly spread from Hungary to America.

Closer control of size and lower operating costs were two of the many advantages of the first Prater Gradual Reduction Grinders which helped pioneer the custom feed industry.



Faster service and a more uniform grind keynote today's trend in grinding as exemplified by the years-ahead Blue Streak Advance Custom Mill. This Prater masterpiece brings to millers everywhere the high-volume advantages of automatic crusher feeder . . . streamline flow of material . . . hi-capacity blower fan . . . Prater permanent magnet . . . plus TRIPLE REDUCTION GRINDING—to produce the mealy, more digestible, more profitable Granular Grind!



A far cry from the grinding hardships of yesteryear is the Pratermatic Remote Control Device for changing screens from the operating floor—automatically! It's another advancement by Prater—for use exclusively with the Blue Streak Advance Custom Mill.

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The new fifty-pound paper bags will not only take the backache out of feed handling, but a lot of the headaches as well, because they're easier to store; easier to open and pour; offer better protection from weather; and they're more resistant to rodents and insects.

And, of course, in every one of the new bags there will be the same high quality, the same scientifically blended and balanced feed that has made Tuxedo a No. 1 choice with leading poultrymen everywhere.

Yes, these new, better-looking, easier-handled Tuxedo bags are sure to make a big hit with Tuxedo Dealers' customers everywhere.

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Dec. 18	572	474	451	513	124	343	1,135	1,018
Dec. 25	555	319	308	395	86	291	999	444
Jan. 1	599	463	417	497	93	347	1,095	1,023
Jan. 8	534	399	380	521	107	321	1,192	1,083
Jan. 15	550	252	415	507	93	237	1,151	1,085
Jan. 22	580	328	492	532	101	338	1,134	1,180
Jan. 29	600	416	594	651	164	400	1,398	1,260
Feb. 5	606	514	606	749	232	472	1,723	1,412
Feb. 12	636	565	701	791	132	587	1,926	1,279
Feb. 19	617	518	718	665	207	594	1,939	1,356
Feb. 26	633	641	720	689	203	610	1,851	1,435

Week ending:	Va.	W. Va.	No. Car.	So. Car.	Ga.	Fla.	Ala.	Miss.
Dec. 18	849	265	924	143	2,468	153	797	622
Dec. 25	603	245	585	95	2,085	130	677	525
Jan. 1	744	287	847	131	2,487	147	833	527
Jan. 8	831	335	897	186	2,520	147	893	662
Jan. 15	765	344	852	163	2,414	139	837	650
Jan. 22	727	404	976	174	2,518	124	867	565
Jan. 29	1,137	405	1,055	197	2,698	176	909	703
Feb. 5	1,283	452	1,129	190	3,008	186	1,061	713
Feb. 12	1,405	556	1,200	212	3,108	201	1,030	786
Feb. 19	1,315	554	1,146	235	3,206	188	1,077	804
Feb. 26	1,371	555	1,190	214	3,028	183	1,040	827

Week ending:	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 23 areas 1954-55
Dec. 18	1,212	158	1,269	156	114	802	14,562
Dec. 25	1,022	124	667	171	75	702	11,094
Jan. 1	1,222	179	916	200	81	843	13,977
Jan. 8	1,068	158	1,302	178	88	866	14,678
Jan. 15	1,112	129	1,235	169	73	871	14,072
Jan. 22	1,075	114	1,130	167	93	893	14,582
Jan. 29	1,151	134	1,364	192	100	899	16,632
Feb. 5	1,393	226	1,339	169	103	855	18,426
Feb. 12	1,503	208	1,416	186	113	958	19,411
Feb. 19	1,486	187	1,454	219	143	982	19,600
Feb. 26	1,554	201	1,561	216	189	1,107	20,018

COMPARABLE 13 AREA TOTALS* (000's omitted)

	Eggs set			Chicks placed		
	Feb. 12	Feb. 19	Feb. 26	Feb. 12	Feb. 19	Feb. 26
1955	21,900	21,339	21,227	15,175	15,236	15,618
1954	20,727	21,333	21,868	14,804	14,896	14,891

*Former reporting areas of Maine, Connecticut, Delmarva, Shenandoah Valley Virginia-West Virginia, North Carolina, Georgia, Texas, Florida, Alabama, Mississippi, Indiana, California and Oregon.

Spencer Kellogg Shifts W. F. Osborne to Decatur

BUFFALO — William F. Osborne has been transferred to Decatur, Ill., where he will work with Harold Bowen on the sale of Spencer Kellogg & Sons oilseed meals, it has been announced by R. E. Peterson, manager of the oilseed meals division.

Don R. Marsh has been appointed meal sales representative to succeed Mr. Osborne. Mr. Marsh has been associated with Spencer Kellogg since his graduation from Washington and Lee University in 1948 and has had experience in the oilseed meals division of Spencer Kellogg. He will continue to work from the company's Buffalo office.

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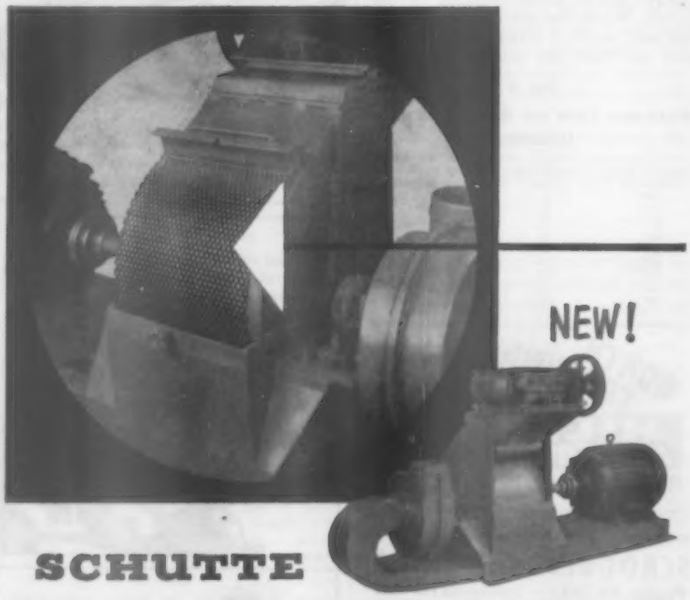

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Nutrition Leaders Outline Importance Of Distillers Dried Grains, Solubles

By DON E. ROGERS
Feedstuffs Editorial Staff

CINCINNATI — Progress reports from university nutrition experts from across the nation were heard at the 10th anniversary conference of the Distillers Feed Research Council in Cincinnati March 3. Laying the groundwork for these reports was one presented by an official of the American Feed Manufacturers Assn. in which some credits and cautions were outlined for those associated with the feed industry.

The 250 registrants at the conference set a new attendance record. Meeting site was the Sheraton-Gibson Hotel here.

(A report on the election of officers, production figures of distillers solubles in 1954, and the report of the outgoing president, C. D. McDermott, Grain Processing Corp., Muscatine, Iowa, appeared in the March 5 issue of Feedstuffs, page 4.)

Economic Gains

Choosing as his subject, "Be Alive in '55," W. E. Glennon, president, American Feed Manufacturers Assn., Chicago, surveyed the tremendous advances that have occurred in the nation's economy during the past 15 years. The manufactured feed industry now ranks among the 10 top manufacturing industries in America, with a gross national product approaching $4 billion, Mr. Glennon said. The feed industry is the largest manufacturing industry in the world offering goods and services exclusively to agriculture.

Tonnage of manufactured feed during 1954 set a new record, Mr. Glennon said. Total production was estimated at 35 million tons, up 4% over 1953. In addition, the industry has increased the percentage of manufactured feed in relation to the total rations consumed by livestock and poultry. Mr. Glennon said that at present 30% of all feed consumed, exclusive of pasture and roughage, is manufactured feed. This represents a substantial gain over that of a few short years ago, he added.

Contributing to this rapid increase in formula feed manufacturing, is the story of increased feed efficiency, Mr. Glennon said. It was recently reported that the University of Maryland has produced broilers using only 1.64 lb. of feed per pound of gain. Such performance on a commercial operation may or may not be achieved, Mr. Glennon said, but 15 years ago a pound of gain on 2.5 lb. of feed would have seemed impossible.

"Without a doubt, the feed manufacturer of today is supplying a product that is as modern and up-to-date as any in America," Mr. Glennon added. "Despite this fact, there is still too large a percentage of feeders that are feeding inefficient and poorly balanced rations. These feeders must be reached and 'converted.' Such feeders represent an untapped market of considerable magnitude."

"The human element is still by far the most important single factor in the operation and success of any business, and that applies to the feed business," Mr. Glennon said. "As competition increases, the value of competent personnel will become more evident."

Mr. Glennon threw out a word of warning about unsound credit in the feed industry. In some respects the feed industry may be a little too zealous in its desire to increase tonnage, he said. Credit should not be condemned, as it has played an important part in raising the poultry industry from a barnyard sideline into the important multi-billion dollar industry it is today. "But the train has gained so much momentum that today it is almost out of control. A governor is needed to slow the train down and get it around some serious curves or the result may be a disastrous train wreck," he said.

"Regardless of the mistakes we may make, in my opinion, the sheer weight of economic necessity will push us toward ever expanding production and markets," Mr. Glennon concluded. "Those who make too many or too flagrant errors along the way will suffer and die. This is the free enterprise system, the American way; none of us would want it otherwise."

Rations For Steers

Dr. W. P. Garrigus, chairman, Animal Industry Group, University of Kentucky, discussed distillers dried grains with solubles in winter rations for steers. He reported on experiments at the University of Kentucky since 1948.

"Both distillers dried solubles and distillers dried grains with solubles, when fed with timothy hay and shelled corn to six wethers in a digestion-metabolism test, produced digestion coefficients equal or superior to those of a similar ration using soybean oil meal as the protein concentrate," Dr. Garrigus said. "The distillers dried grains with solubles induced significantly higher digestibility of crude fiber and gross energy as well as a significantly higher me-

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tabolizable energy content than did the soybean oil meal.

"In an experiment in 1952, attempts were made to increase feed intakes and gains of steers full fed in dry lot with corn distillers dried grains with solubles as the sole or principal concentrate. One approach was to pellet the dried grains. The steers fed the pelleted dried grains ate no more total feed per day, but gained 7.6% faster than similar steers fed loose dried grains. 'Diluting' of the dried grains with an equal weight of soybean oil meal made slight but non-significant increases in gains and feed intakes. The use of only one half the daily intake of dried grains with sufficient urea to supply an equal amount of nitrogen, and a small amount of sulphur, decreased both total feed intakes and gains.

"These results would indicate that pelleting of the distillers dried grains with solubles offers the best prospects for increasing daily gains where corn distillers dried grains with solubles are to be used as the principal protein concentrate for full fed steers. They would also indicate that distillers dried grains with solubles may play their most valuable role in rations for wintering brood cows or stocker steers."

Use in Biologicals

The use of distillers dried solubles and other supplements for the production of biologicals was discussed by Harlow H. Hall, Fermentation Dept., Northern Regional Laboratory, USDA, Peoria, Ill. Industrial fermentations for the production of vitamins, antibiotics, enzymes and related biological products often utilize grain or oilseed processing fractions and residues as a source of nutrients for the microorganisms, he said. Among such products are distillers dried solubles, soybean oil meal and corn steep liquor. Products of this class are generally looked upon to provide inexpensive nitrogen and other substances needed by the fermentative organisms, including carbohydrates, vitamins, minerals or even unrecognized growth factors. The Northern Research Laboratory and many other laboratories are interested in the production, chemistry and use of these products and employ them in the fermentative production of vitamins, antibiotics, and enzymes, he said.

Antibiotics are among the most important products formed by microorganisms, he added. Scientific publications record the discovery and description of some 500 different antibiotic substances. Relatively few of these are manufactured in large quantity for combating the diseases of man, animals and plants, or to promote better growth of animals. Those in large-scale production are penicillin, streptomycin, bacitracin, aureomycin, terramycin, chloramphenicol and ilotycin. During a period of 13 years since the production of the wonder drugs was started, there has been a steady increase in production. In 1953 the wholesale value of antibiotics was $328,000,000, Mr. Hall said.

Antibiotics, like certain vitamins, are produced by submerged culture fermentation processes, he said. A review of the literature shows that wide variety of vegetable and animal materials is capable of supplying nitrogen to the fermentative organisms. Among these materials are distillers dried solubles.

Mr. Hall stated that the inclusion of distillers dried solubles, alfalfa, whey, yeast and other products in experimental rations frequently gives unaccountable growth response, which suggests the presence of growth factors. Some of these factors are deemed essential for the best growth of poultry and swine. Pending the identification of such factors, they are usually referred to as "unidentified growth factors."

Unidentified growth factors occur in trace amounts in source materials and exhibit many characteristics of other vitamins. The presence of one such factor in distillers dried solubles has been reported. It has been isolated and designated vitamin B_{12}. Progress on the development of a simplified method for extracting this vitamin from distillers dried solubles has been made, and chick feeding tests have been conducted with this vitamin. It is possible that unidentified growth factors may be important to the various micro-organisms in producing biologicals, Mr. Hall explained.

Milk Production

Dr. J. K. Loosli, Department of Animal Nutrition, Cornell University, Ithaca, N.Y., reported on a study of the comparative value of corn distillers dried grains, cocoanut oil meal

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and corn gluten feed for milk production. Data showed that the milk fat percentage was significantly higher when cows were receiving the mixture containing the cocoanut oil than on mixtures containing distillers dried grains and corn gluten feed. There were no significant differences in the total milk or 4% fat corrected milk produced, he said. A similar statistical analysis showed that the cows gained significantly more body weight when they were fed corn distillers dried grains than when fed corn gluten feed.

Dr. C. F. Huffman, Dairy Department, Michigan State College, East Lansing, Mich., gave a progress report on the use of vegetable milk replacements in calf nutrition. He reported that in the system of cud inoculation of calves and feeding a ration high in roughage, there was no advantage of feeding a complex calf starter ration over a simple, low-protein grain concentrate mixture. This was attributed to the fact that rumen function was sufficiently developed in most calves by seven weeks of age to permit all the milk and other sources of animal protein to be removed from the ration without decreasing growth. Under usual farm conditions, calves probably acquire their rumen starter from association with older calves and cows.

"The type of diet that is fed to young calves appears to affect the rate of development of the rumen," Dr. Huffman said. "According to Blaxter, and others, calves fed roughage have an increased capacity of their four stomachs. New Zealand workers have found that calves start to ruminate as early as seven days. Rumination was rarely started later than three weeks, at which time the calves started eating pasture. By the time a calf is three months of age it has a rumen which is as large as that of an adult cow in relation to its body weight and even larger at five months of age. At eight to 10 weeks of age it was observed that a calf digested dry matter of good quality, young leafy pasture grass, with the same efficiency (75%) as an adult cow. These investigations showed, however, that calves are highly selective grazers and tend to starve themselves on unsuitable pastures."

Michigan Tests

Dr. Huffman said that Michigan State College has studied the effect of feeding young calves an all vegetable type starter on growth rate and health when the only source of animal protein used was 10% dried whey. The calves fed such a milk replacement formula made poor gains to 20 to 40 days of age, depending on the individual calf, when appetite and rate of gain in weight improved markedly. The period of time required for calves to become adjusted to the high vegetable milk replacement was referred to as the critical period. The satisfactory gains in weight after the critical period may be associated with the development of desirable rumen micro-flora.

Summarizing a recent experiment, Dr. Huffman said that 21 four-day old holstein calves were divided at random between three groups that were fed milk replacement formulas consisting of a basal, basal plus 5% dried whey and basal plus 3.5% lactose. The total amount of milk consumed was 50 to 55 lb. per calf. Analysis of the data showed no significant differences in average daily gain and feed efficiency between the calves on the three milk replacement formulas. However, calves on the formula containing dried whey were superior in appearance and had a more costive feces. In this investigation, Dr. Huffman said, the critical period varied from 20 to 30 days of life. After the critical period of growth rate of the experimental calves was equal to that of the USDA growth standard.

Broiler Trials

Distillers dried solubles as a source of unidentified growth factors in broiler diet was discussed by Dr. T. D. Runnels, department of animal and poultry industry, University of Delaware.

"Commercial broiler producers usually achieve the most favorable cost of production when the birds are grown to market weight in the shortest possible time," Dr. Runnels said. "Such factors as breeding, management, disease control and diet, influence their rate of growth and are important in that any one of these factors can contribute to the success or failure of the broiler enterprise."

Dr. Runnels reported on a number of experiments in broiler rations and said evidence has been presented which indicates distillers dried solubles, dried whey and menhaden fish solubles all contain unidentified growth factors that are essential for optimum growth in broilers. When these ingredients were combined in the diet, none of them was completely effective in replacing any of the others at the levels used in the experiment.

In formulating practical broiler diets, Dr. Runnels said these data indicate that a 2.5% level of distillers dried solubles is as effective in improving growth and feed efficiency as higher levels. A combination of distillers dried solubles, dried whey and fish solubles produces superior results to any single ingredient or pair of ingredients tested.

Beef Cattle Report

Dr. Wise Burroughs, Department of Animal Husbandry, Iowa State College, Ames, spoke on new developments in feeding beef cattle. Stilbestrol, when added to cattle supplements increases live weight gains markedly and decreases feed costs appreciably, Dr. Burroughs stated. Live weight gains appeared to be stimulated on all types of cattle rations; however, the greatest stimulation is noted on the better rations containing generous amounts of grains.

Gains have been stimulated as much as 37% on high-corn fattening rations which amounts to as much as ¾ lb. additional gain per steer per day. On high-roughage rations where cattle are being wintered to gain moderately, stilbestrol stimulates gains by approximately 10 to 15%, he said. Both heifers and steers respond to stilbestrol feeding; however, somewhat more response is noted in the case of steers. Age of cattle does not appear to be consequential in the response of stilbestrol upon growth and fattening in cattle. Cattle weighing

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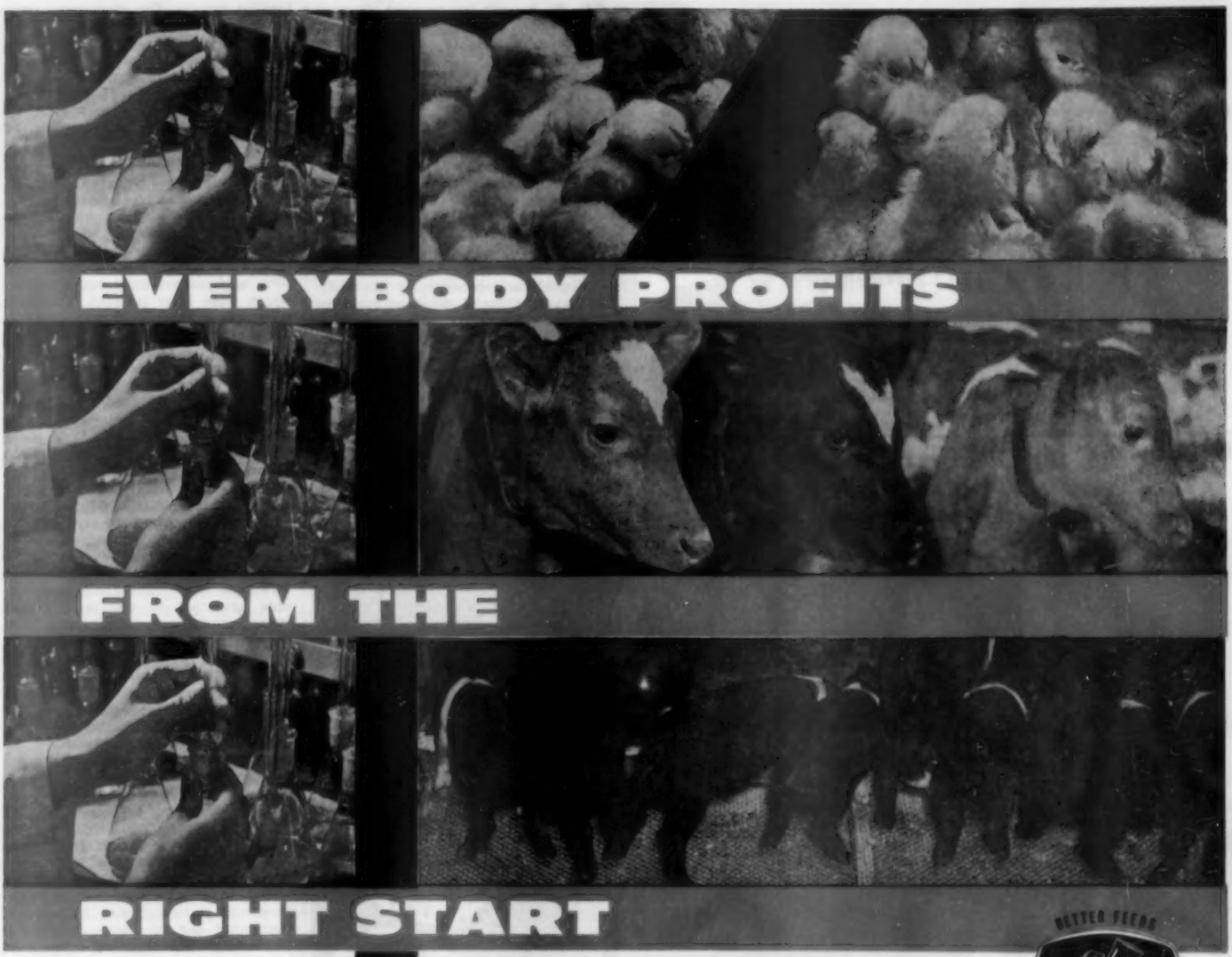

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600 lb. appear to respond as well as cattle weighing 1100 lb. However, extremes in weights below or above this weight have not been tested extensively.

Dr. Burrows said feed costs on all types of cattle rations and with different types of cattle are reduced from 10 to 20% with stilbestrol. The saving in feed costs with current feed prices represents a savings of approximately 2-4¢ per pound of gain. Appetite is stimulated moderately by stilbestrol feeding, the stimulation in feed consumption amounting to about 5% of the average.

Considerable controversy has existed among research workers concerning the advisability of adding antibiotics to beef cattle feeds, Dr. Burroughs said. During the past year, results at Purdue University have shown a favorableness to the addition of antibiotics to rations containing medium to high levels of roughage. Little or no advantage from antibiotics was noted in the case of a high-grain ration. Experiences at Iowa have partially confirmed the Purdue results, Dr. Burroughs said. Adding aureomycin (75 mg. daily per steers) into high-roughage rations resulted in both instances in somewhat better gains over those obtained where no antibiotics were fed. The additional gain proved profitable in one of the two rations and not in the other, he said.

Use of Animal Fats

Dr. Burroughs reported the successful use of animal fats in beef cattle rations has been obtained in experiments conducted at the Nebraska Experiment Station. Animal fats were mixed with ground corn cobs, soybean oil meal and minerals which were later pelleted. The mixture was compounded such that it contained approximately the same energy value as corn grain. Upon feeding these pellets containing animal fat in limited quantities, satisfactory gains and feeding performance were obtained. Higher feeding levels of animal fats than ½ lb. daily per steer in some instances resulted in lower rates of gain. Corn oil failed to give as good results as beef tallow. Inedible animal fats, on the other hand, appeared to give as good results as edible tallows.

Unidentified factors capable of stimulating gains and feeding performance have been given considerable attention in the poultry and swine nutrition, and evidence continues to develop that unidentified factors are also of importance in beef cattle and ruminant nutrition, Dr. Burroughs stated.

Work at the Ohio Agricultural Experiment Station indicates values in molasses which cannot be fully accounted for on the basis of known nutrients such as sugars and minerals, he said. This is especially true in rations containing low-quality roughage even though considerable grain is included in the ration. In Indiana trials, similar influences have been noted with dehydrated alfalfa meal added to supplements fed in high-corn cob rations. Yeast, in two experiments out of three at Purdue University, has likewise stimulated cattle gains. Attempts to obtain beneficial results from unidentified factors in by-product feeds such as molasses solubles and wheat protein hydrolysate have been negative up to this time.

Dr. Burroughs said that torula yeast in one trial at the Iowa Station stimulated gain somewhat in a fattening ration containing a considerable amount of corn stalk silage and no hay.

None of the feeding results to date with beef cattle have pinpointed the exact nature of these unidentified factors which have importance in beef cattle nutrition, Dr. Burroughs stated. Nevertheless, evidence continues to accumulate from feeding trials and from artificial rumen studies that unidentified factors are of importance and are likely to be given much more attention in future research in beef cattle nutrition.

Unidentified Factors

Dr. L. C. Norris, Professor of Nutrition, Cornell University, spoke on recent progress on experiments on unidentified growth factors in distillers dried solubles and other feed supplements. He described experiments made with various sources of unidentified growth factors in comparison with Cornell's recently developed basal diets composed of purified ingredients. As a consequence of the improvement in experimental procedures, Cornell workers have obtained evidence of the existence of at least two unidentified chick growth factors.

Describing the results of feeding experiments on growing chickens, Dr.

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Norris said that distillers dried solubles contains an essential growth factor which "in all probability" is an unidentified mineral element or elements.

He added that distillers dried solubles apparently contains other growth factors which may be of organic rather than mineral composition.

While the mineral is yet to be identified, this step in the scientific process is not considered as difficult as the actual determination that mineral diet factors do exist in specific substances.

Dr. Norris' discovery is considered of major importance in the nutrition field.

Dr. H. M. Scott, department of animal science, University of Illinois, summarized a discussion of chick feeding experiments with the report that supplements of distillers dried solubles, alfalfa meal, dried whey, liver powder and fish meal significantly improve chick growth when added to a purified diet. The factor in distillers dried solubles appears to be distinct from the factors postulated to exist in alfalfa meal, whey, liver powder and fish meal. Distillers dried solubles, whey, fish solubles and, to a lesser extent, liver powder, enhanced chick growth when added to a corn-soya diet supplemented with all the known vitamins, he said.

Dr. J. R. Couch, Professor, department of poultry husbandry, Texas A&M College, reported that distillers dried solubles increased the growth rate of chicks when added to a practical all-vegetable type protein diet and fed to chicks on litter under practical conditions. Distillers dried solubles has been found to combine effectively with dried whey and fish solubles as sources of unidentified factors in a practical type chick diet.

(The text of Dr. Couch's address will appear in Feedstuffs at a future date.)

Dr. Damon V. Catron, department of animal husbandry, Iowa State College, discussed distillers dried solubles in starter and growing-finishing rations for swine.

"During the past 15 years, distillers dried solubles has established itself as a popular ingredient in swine rations," Dr. Catron said. "Research has shown that distillers dried solubles not only is a rich source of essential known water-soluble vitamins, namely, riboflavin, niacin, pantothenic acid and choline, but also a source of unidentified growth factors for pigs.

"A summary of the literature reveals the meagerness of information and the need for research on the use of distillers dried solubles in baby pig rations," Dr. Catron added.

The addition of distillers dried solubles to basal rations improved feed consumption, Dr. Catron stated, and dispelled the fears held by some nutritionists and feed manufacturers who thought that distillers dried solubles would reduce the palatibility of their pig starter rations in which they were struggling to improve palatability.

Following the business sessions, the conference ended with the usual social hour and banquet.

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CAPITAL COMMENT

By John Cipperly

WASHINGTON—Grain trade manipulations of drouth area certificates during the emergency feed program raised havoc in feed trade circles and threatened to bring down chaos within the feed industry and discredit to the best laid plans of the Commodity Stabilization Service officials who backed this program.

Returning from a recent field trip through the Southwest, Walter C. Berger, associate director of the CSS, told this down-to-life story of a New Mexico feed dealer who had taken a severe beating in the previous phases of the drouth relief deal.

The dealer involved is Austin Brooks, general manager of the El Rancho Milling Co., Clovis, N.M.

When the drouth relief program was under-way grain dealers in the Midwest advertised to consumers and feed dealers that they were prepared by sight draft to honor feed certificates at a premium over the government redemption price. Subsequently they withdrew from that position and announced that henceforth they would only accept drouth certificates at a discount.

Berger Tells Story

Mr. Berger relates that a rancher-dealer—no customer of Mr. Brooks' company—came in to his establishment at Clovis and asked Mr. Brooks if he was prepared to honor CSS certificates at full value, cash on the barrelhead. It was Saturday afternoon, and Mr. Brooks said he was prepared to honor the CSS certificates with his check for full value since he did not have access to a bank for cash. The applicant said he had certificates amounting to $8,000. Mr. Brooks said he would honor the certificates without question at the full value. The applicant, somewhat surprised, backed away and said that this was about all he wanted to know.

Mr. Berger tells this yarn to Feedstuffs to show the support that feedmen in the Southwest and probably other areas gave to the program, notwithstanding the manipulations which were in the making to discredit the program, unconsciously, from other sources. Mr. Berger speaks pridefully of Mr. Austin Brooks, and reasonably so.

KANSAS BLAZE

WICHITA, KANSAS—The Harris Farm Supply Store here was badly damaged by fire recently. The manager of the store, Mansfield Harris, suffered first degree burns when he attempted to put out the blaze.

Pfizer Judging Contest For Feed Dealers To Close March 31

NEW YORK—Entries for the 1955 special livestock judging contest for feed dealers sponsored by Chas. Pfizer & Co., Inc.—which has a top prize of one silver dollar for each ounce the winner weighs and 150 other valuable awards—must be postmarked not later than midnight, March 31.

Announcement of the deadline for the contest, which is held in conjunction with Pfizer's annual $20,000 national livestock judging contest, was made by J. J. Thompson, manager of the company's agricultural sales division.

Dealers will be scored on how they rate photographs of any one of three classes of livestock—hogs, laying hens, and dairy cows—which are printed on entry blanks available either from Pfizer salesmen or by writing direct to Chas. Pfizer & Co., Inc., 630 Flushing Avenue, Brooklyn 6, N.Y. Any number of entries in any number of the categories may be submitted, Mr. Thompson said.

The top-ranking dealer will be awarded an all-expense paid trip to Chicago at the time of the International Livestock Exposition, where he will attend the final judge-off of the national contest—and where he will also have his weight in ounces matched with silver dollars.

Mr. Thompson noted that the general livestock judging contest is designed to encourage the use of feeds containing antibiotics at high levels. Contestants must include an analysis tag from any brand of feed or concentrate with each entry, which in turn stimulates business at the local feed store. However, he added, no analysis tag is required for entering the dealer contest.

The first prize in the 1954 special dealers' contest, a new Ford Victoria hardtop convertible, was won by F. S. Nash, who operates a feed store in Canton, S.D.

CATTLE GRUBS COSTLY

LARAMIE, WYO. — Cattle grubs cost Wyoming cattlemen about 2 million dollars each year, says T. R. Robb, extension entomologist at the University of Wyoming.

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Feed Production Executive Analyzes New Developments

The feed manufacturer these days is sometimes facetiously referred to as a "druggist," and some feed men probably figure they have just about earned a degree in pharmacy. This situation, of course, is all part of the increasingly complex nature of feed manufacturing, what with the use in feeds now of minute amounts of drugs, vitamins, synthetic hormones and other substances. But that's just part of the story. There are also such things as increased use of liquid ingredients and, to cut down on labor costs and increase efficiency, more and more automation.

Everyone in the feed manufacturing business is pretty well aware of these various modern developments. But some of them were pointed up recently by a feed production man taking a look at industry progress.

Speaking at a meeting in Chicago of the Grain Processing Machinery Manufacturers Assn., Erwin C. Wascher, vice president, Honeggers' & Co., Fairbury, Ill., called attention to some of the recent major developments in feed production and noted their significance in present and future feed plant operations. (A report on the meeting appeared in the Feb. 12 issue of Feedstuffs.)

Providing a background for his presentation, Mr. Wascher pointed out that the feed industry is continuing at a rapid pace to make the business of feed production more and more complicated. The various new developments, including the use of trace ingredients, add to the dependence put on machines for accuracy in grinding, blending, mixing and weighing. And the increased complexities continually demand more machinery, heavier machinery and more accurate machinery.

None of the progressive milestones in feed manufacturing have called for more manpower, Mr. Wascher noted. Instead, the industry is constantly able to turn out larger volumes with the same or less manpower by the use of new production techniques and equipment.

Taking a close look at feed manufacturing, Mr. Wascher analyzed some of the specific developments which have created and are creating pressures and demands for change. He classified these changes generally as "methods" and "ingredients." And he proceeded to consider

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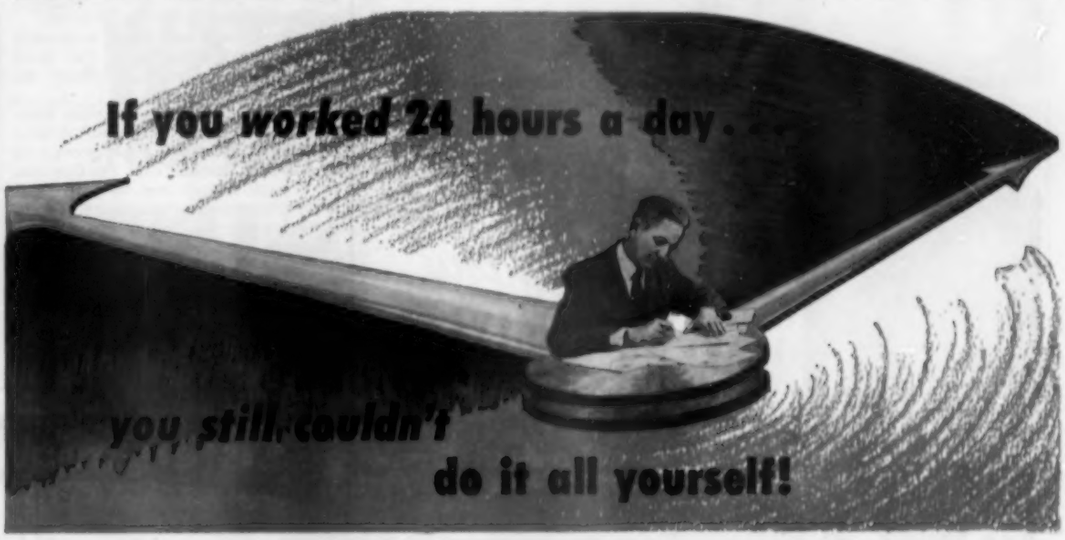

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five phases of feed manufacturing which are in the process of assuming a new look. They are:

1. The bulk ingredients movement.
2. Increased use of liquids.
3. Automatic proportioning.
4. Fork lift truck as a means of conveyance.
5. Use of corn cobs and other roughages as feed ingredients.

Bulk ingredients—Creating much interest, Mr. Wascher said, is the trend toward raw materials in bulk in covered hopper cars which require only the opening of trap doors to unload the entire contents of a car in just a few minutes. This, he added, can mean increased efficiency, and many ingredients which were often difficult to handle in bulk from box cars—such as salt, calcium, phosphate and alfalfa meal—lend themselves quite readily to this form of shipment.

"However," Mr. Wascher pointed out, "handling of this large volume of unloading and the tremendous surges which it places on raw materials unloading equipment, demand that we consider larger capacity equipment and elevating systems."

Several railroads have expressed an increased interest in this bulk covered hopper car movement, he said.

He continued: "The Wabash Railroad, for example, has reported that covered hopper cars have proven to be the best revenue cars the line has, for a bulk hopper car, as soon as it is empty, moves immediately back for reloading whereas box cars sometimes sit on sidings for several days before being moved for reloading.

"Several other lines, including the Rock Island, Sante Fe and Union Pacific have converted open hopper type coal cars by increasing their size and covering them so that they can be used for such commodities as feed ingredients. With the drop in coal production and consumption, it is understandable that railroads are eager to convert some of the cars standing idle into equipment which will bring them good volume."

Liquids—The use of liquid fat has been a decided asset for the feed manufacturer who has been able to modify his equipment and facilities for its inclusion in feeds, Mr. Wascher said. This is particularly true, he added, because of the dry, low fat and dusty characteristics of many solvent processed ingredients. Benefits of this ingredient in feeds include better texture, less dustiness and high energy. Also, there is more production and less abrasion in pellet mills and other equipment, and a generally cleaner feed plant results. Mr. Wascher said feed plants using liquid fats generally have a cleaner look than previously.

"Of course," he continued, "this milestone is not without problems, such as facilities for receiving and storing liquid fat, extra steam or hot water requirements for keeping the material heated, more intricate blending equipment, and more meticulous scalping and dressing of the finished feed."

Automatic proportioning — "Certainly a new era is being opened in the method in which raw ingredients are drawn out and assembled for mixing," Mr. Wascher pointed out.

"There are several systems of automatic batching wherein an ingenious arrangement of electronic cells, solenoids, switches and lights takes information fed into a remote control panel and completes a cycle of drawing ingredients, weighing, mixing and discharging; reporting on the progress of each cycle through a system of lights on a control board and

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Fork lift trucks—The use of fork lift trucks in handling finished feeds either as an alternative or as an adjunct to belt conveyors and other types of conveying equipment needs no introduction, Mr. Wascher pointed out.

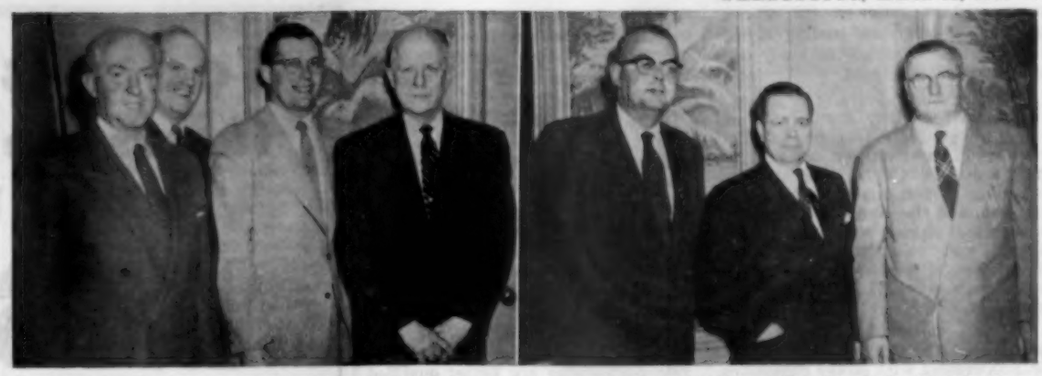
Five years ago fork lift trucks were a rarity in feed mills. Today they are commonplace and have found great usefulness, Mr. Wascher said. The value of the fork lift truck as a means of material handling has been shown not only in the feed industry, but in many other types of manufacturing — almost everywhere where packaged finished goods must be handled and where much of the handling previously was done manually, he noted.

Belt conveyors, he continued, serve a very useful purpose, particularly when feed can be moved direct from bagging lines to outbound cars or trucks. But, he added, in the type of feed business which calls for many different formulas and different forms, it has been found that a fork lift system is an efficient method of operation.

Corn cobs and roughages—Coarse, low cost and low quality roughages such as corn cobs need some consideration in thinking about trends in the feed business, Mr. Wascher said.

"Corn cobs, for example, may never be handled in commercial feed mills where large production is involved because of huge storage facilities which would be required and because special crushing and screening machinery would be needed," he said.

"We should, however, realize that our nutrition and research people



SOME TOP TALENT OF THE FEED INDUSTRY outlined needs of the trade at the Grain Processing Machinery Manufacturers Assn. meeting in Chicago recently. Pictured at the left are Gene Gehrig, Quaker Oats Co., Chicago; J. P. Corcoran, Mill Mutual Fire Prevention Bureau, Chicago; Erwin C. Washer, Honeggers' & Co., Fairbury, Ill.; and E. D. Griffin, Allied Mills, Inc., Chicago. Association officers pictured on the right are Walter C. Ronk, Barnard & Leas Mfg. Co., Cedar Rapids, Iowa, who was elected president; Raymond J. Walter, New York, renamed secretary-treasurer; and George F. Thomas, Prater Pulverizer Co., Chicago, retiring president. Ralph E. Williams, B. F. Gump Co., Chicago, who was elected vice president, was not present for the photograph.

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have made a major contribution in the science of animal feeding in finding the true value of the lowly corn cob for livestock feed.

"The next few years of experience will show whether corn cobs and other roughage will be processed at the feed manufacturer level or on the farm. But in either case, someone is going to sell machinery for this process, and the commercial feed industry will at least supply the supplements and concentrates necessary for mixing with the low cost roughages to make balanced rations for farm animals."

In this connection, Mr. Wascher noted that the University of Illinois, in cooperation with power companies, has been working with automatic grinding and proportioning equipment which allow the farmer to preset grinding equipment to draw corn, oats, roughages and supplement from bins and then go about his farm work, thus being freed from considerable labor.

While discussing several new developments in feed manufacturing, Mr. Wascher also pointed out that "electronic equipment is not going to make people obsolete."

Industry will always need machine operators, supervisors, skilled mechanics and machinists to watch over the more and more complex machinery and equipment. These machines will never run completely by themselves, although the more complex machinery becomes, the more ability it will have to take over all manual labor.

"This means," Mr. Wascher said, "that we have a responsibility to provide people who are better qualified and more skilled in their fields to watch over these machines, to see that these mechanical monsters we have created continue to perform with the high degree of efficiency and accuracy for which they were designed, purchased and installed in our feed plants."

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VIRGINIA MEETING

(Continued from page 16)

observed the storage of copper in the livers of sheep is prevented if the ration contains trace amounts of molybdenum. The same amount of molybdenum if added to another ration, permitted normal copper storage in the liver. The difference between the two rations was that the first contained alfalfa hay while the second contained oat hay. Later it was found that the difference in sulphate content of the two hays was responsible for the different effects on the storage of copper in the livers of the sheep. This suggests that the imbalance involves not two but at least three different mineral elements.

Dairy Nutrition

Delegates to the meeting were brought up to date on developments in dairy cattle nutrition by Prof. Paul M. Reaves, VPI. The greatest single weakness in our feeding program for dairy cattle he said, is merely not giving our milking cows enough feed.

We cannot overlook value of pasture in adequate nutrition of dairy cattle in economical dairy production, he said. However, a survey has shown in 14 southern states pasture provides only 36% of the total feed nutrients required by dairy cows. Under the present system then, it is necessary that considerable roughage and concentrate be fed if a reasonable milk level is to be maintained until an adequate pasture program is developed.

Prof. Reaves also discussed other aspects of dairy nutrition, including roughage quality and mineral needs. He cited research showing the effect of enormous quantities of vitamin D and the effect of a low calcium-high phosphorus ration in preventing milk fever. Regarding fat, he said it is questionable whether the fat content should go to above 6% in the grain mixture because of possible effects on digestion.

Wetting or soaking feeds will not increase digestibility for ruminants, but it has been found in the use of the walk-through milk parlor that feed was consumed faster when water was used on the grain mixture. Tests have shown no advantages in digestibility for coarse textured feed, Prof. Reaves said, but many feeders like the appearance of it and it appears to be more palatable.

Hormones

The subject of hormones and hormone like substances in relation to the feed industry was discussed by Dr. H. S. Wilgus, Peter Hand Foundation, Chicago. In introducing his subject Dr. Wilgus said that the physiological and emotional processes in the body are regulated by hormones, the secretion of the endocrine gland. As a result of increasing knowledge of the functions of these powerful regulators, tremendous research efforts have been devoted to attempts to modify favorably the production of livestock and poultry products to implantation, injection, or feeding of hormones or of synthetic hormone-like substances.

The delicate inter-relationship, continued Dr. Wilgus, in the body among the endocrines and the hormones is so easily and often profoundly disturbed by such tampering by man that desired effects are usually possible in only a few instances and in narrow limits before undesirable or disastrous effects are encountered. Thus, the practical applications of these substances to the feed manufacturer constitute a minor fraction of the research knowledge in this field.

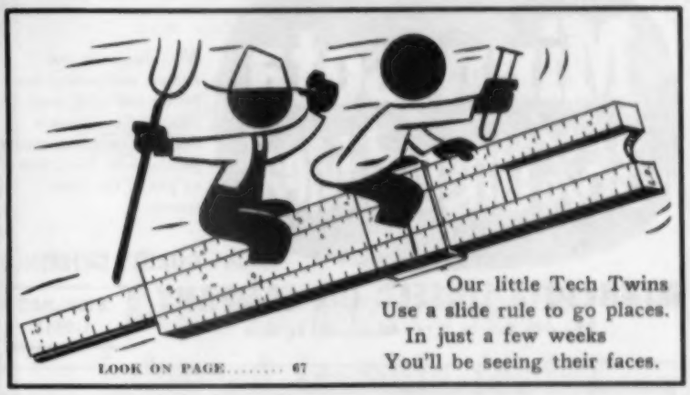
After discussing several substances at length, Dr. Wilgus summarized by saying that practical utilization under prescribed controls of hormone-like substances for the feed manufacturer is limited to diethylstilbestrol for cattle being fed for market; dienestrol diacetate in fattening rations for broilers, roasters, cocks, turkey broilers and young turkey roasters; and thyroactive protein for skillfully managed commercial dairy herds, especially in fluid milk base areas. Implantation of diethylstilbestrol pellets in the types of poultry mentioned is practiced. In all cases, the extra cost to the feeder must be amply repaid by the results.

Beef Cattle Supplements

Supplements for beef cattle rations were discussed by Dr. T. W. Perry, Animal Husbandry Department, Purdue University. Research at Purdue, he said, over the past six or seven years has shown that beef cattle can be grown and fattened at a rapid and efficient rate at reduced cost through calling on the beef steer to make more efficient use of roughages. In this connection he described Purdue Supplement A.

Some of the results of additional research at Purdue were summarized as follows:

1. Protein and its sources—Soybean meal, cottonseed meal and linseed meal will replace each other pound for pound in beef cattle supplements. Urea can replace up to approximately one third of the protein supplement if an equivalent amount of high energy feed such as corn or barley is



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LOOK ON PAGE..... 67

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added back in place of the protein supplement replaced by urea.

2. Dehydrated alfalfa meal — A small amount of this, when fed with a roughage such as ground corn cobs, produces growth stimulation over and above that which could be contributed to either its protein or TDN content.

3. Hormone-like materials — The feeding of 10 milligrams per animal daily of either stilbestrol, dienestrol, or hexestrol results in markedly increased growth rate. However, this growth stimulation was accompanied at Purdue by such side effects as increased mammary development, depressed loins and elevated tail heads.

4. Antibiotics—The feeding of 75 milligrams of aureomycin or terramycin per animal daily in high roughage type ration resulted in increased growth rate.

5. Active cell yeast, vitamin B_{12} or fish meal—the feeding of a small amount of these materials gave slight growth stimulation.

6. Brewers' yeast, distillers' solubles, fish solubles, molasses, distillers solubles or elemental sulfur showed no benefit in cattle supplements when fed as a portion of Purdue Supplement A with ground corn cobs.

Vitamin A

William C. Sherman, Chas. Pfizer & Co., Terre Haute, Ind., talked on the need for vitamin A in the nutrition of farm animals. He said general changes in poultry rations in recent years to increase the energy level by lowering the percentage of ingredients contributing fiber such as alfalfa have increased the need for supplementing with vitamin A. With growing and fattening hogs, the need for vitamin A arises in dry lot feeding when grains other than yellow corn are used. With brood sows the inclusion of good quality alfalfa and vitamin A is important when green pasture is not available, in the winter and under drouth conditions. Vitamin A deficiency in cattle is a problem under range conditions where green roughage is lacking due to overstocking, drouth or winter conditions, and in feed lots where low quality roughage is fed.

Destruction of carotene and added vitamin A by oxidation in feeds, said Mr. Sherman, is a serious problem and is accelerated by inclusion of rancid ingredients, high temperatures of storage and contact with minerals. In recent years with the development of synthetic vitamin A, dry vitamin A supplements have been developed and by making use of coatings of such materials as gelatin or wax to protect the vitamin A from contact with air, rancid ingredients and minerals, improved stability has resulted.

Dairy Concentrates

"The amount of protein and the cost per unit of protein and digestible nutrients should be the main criteria used in formulating concentrate feeds for dairy cattle," said Dr. J. Thomas Reid, professor of animal husbandry at Cornell University, Ithaca, N.Y.

The amount of protein needed in the concentrate mixture, said Dr. Reid, depends upon the amount of protein in the roughage consumed. In turn, the amount of protein consumed in roughage feeds is determined by the stage of growth at the time of harvesting, the legume content and the amount of roughage consumed.

The amount of protein needed in concentrate mixtures for cows consuming nonlegume roughages ranges from 10 to 20% depending upon the various factors. When no corn silage is fed with first cut nonlegume roughage and the production level of the herd is not low, experiments show 16% of total protein in the concentrate feed generally is sufficient, Dr. Reid said. Also when corn silage is fed with first cut nonlegume roughage harvested before July 1, 16% of the total protein is usually adequate; however, when nonlegume forage is harvested after this date, about 20% of total protein is needed. If the roughage is entirely leguminous—no corn silage—and the result of a first cutting, as little as 10% of total protein in the concentrate is sufficient for milking cows. When the ration contains the usual amount of corn silage with legume roughage, a concentrate mixture containing 13% of total protein is adequate. When forages—either legume or nonlegume—resulting from second or third cuttings are fed as the sole roughage or with corn silage, the concentrate mixture need not contain more than 12% of total protein.

Following the morning and afternoon discussions, a panel discussion, made up of participants in each session, was held. The speaker at the annual banquet in the evening was Dr. Oral Lee Kline, director of research of the nutrition division of the U.S. Food & Drug Administration, Washington, D.C. He told of some of the requirements of the Food & Drug Administration before additives can be consolidated with feeds. Presiding at the banquet was Wilbur

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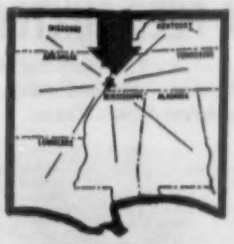

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Gouldman, Gouldman Milling Co., Colonial Beach, Va., who is president of the Virginia State Feed Assn.

Swine Research

George C. Herring, assistant director, Virginia Agricultural Extension Service, VPI, presided over the program the morning of the second day. The first speaker was Dr. C. C. Brooks, associate professor of animal husbandry of VPI. He discussed swine research at the Tidewater Station. Both production and management problems, as well as nutrition come under the scope of study at the station, he said.

In discussing some of the projects, he said that studies with various pasture crops have indicated that ladino clover is the best pasture plant available for use in the Virginia area when the rate of gain and feed saved on growing swine are taken as criteria.

In nutrition studies, preliminary reports would indicate that peanut meal is less variable than tankage when used as the only protein supplement to a ration of corn, vitamin pre-mix and mineral in dry lot, Dr. Brooks said. When fed in this manner, however, neither tankage nor peanut meal gave satisfactory gains. Further studies are under way with these proteins to determine what supplements are needed with them.

The value of inedible grease as a replacement for grain has been tested. This material appears to replace corn pound for pound when used at levels up to 12% of the ration. It does not appear to replace corn on an energy value basis, however.

A progress report on feather meal utilization and high level antibiotic feeding in chicks was given by Dr. E. L. Wisman of the department of biochemistry and nutrition at VPI. Dealing with feather meal, he pointed out that for the last several years nutritionists have shown much interest in the valuation of feather meal as a protein ingredient in poultry and livestock feeds. Thus far, he said, only inconsistency has marked the experimental results. Apparently there are two characteristics of this product which need elucidating before ultimate merits can be assigned to it as a feed constituent. They are (1) nutritional availability and (2) protein quality or amino acid composition, Dr. Wisman said.

The feed data available from amino acid analyses indicate that feather meal may be limiting in the amino acids lysine, methionine, histidine and tryptophan based on the requirements for normal growth. In experiments, neither 6% nor 3% feather meal protein in the diet contributed to chick growth under the experimental conditions. The results further indicate that the protein in feather meal was not nutritionally available to the chick, Dr. Wisman said. He pointed out, though, that only one feather product was tested, and others may behave differently.

In discussing antibiotics, Dr. Wisman observed that antibiotics at low levels may now be found in almost all poultry growing rations. Five years of research in field use have established that these drugs are promoters of early growth in poultry as well as in certain other animals under certain environmental conditions. He said antibiotics at high levels have been successfully useful in combatting disease but have not been found to be any more effective than low levels in stimulating growth.

New Growth Relationship

Now, however, a new growth relationship, is being ascribed to antibiotics. North Carolina nutritionists recently have reported evidence

Here come the twins
On their slide rule slide.
When they finally get here,
Won't you ask them inside?

LOOK ON PAGE 78

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These chicks are vaccinating themselves with combined Newcastle Disease and Infectious Bronchitis Vaccine

3 new WAVAC vaccines are identified by color

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Now, Dr. Salsbury's new WAVAC—the first poultry drinking water vaccine—is available in 3 types: for Newcastle Disease, for Infectious Bronchitis, and in combination for both diseases. Each is identified by a different color.

All new WAVAC vaccines come with the stabilizer and vaccine in one bottle. New WAVAC makes vaccinating easy. No handling of the birds! No dusting, spraying, or special equipment is needed. Just mix in water; *chicks vaccinate themselves.*

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One of the most pressing problems facing all types of libraries is that of providing adequate space for a constant flood of publications. Periodicals pose an especially difficult problem because of their bulk and number. For this reason, many libraries and other users of microfilm equipment are substituting microfilm editions for their paper copies after the latter have passed their period of maximum use.

The microfilm is in the form of positive microfilm, furnished on suitably labeled metal reels, each covering an entire volume. Orders should be addressed to University Microfilms, 313 N. First Street, Ann Arbor, Mich. The cost of each yearly edition is approximately $12.

UNCLE TOM'S FEED FABLES

Abba Kababa, so the ancient story goes, claimed that he owned a herd of the smartest donkeys in the entire kingdom. The king, having heard of his boasting, came to test their wisdom. Addressing the donkeys, he said, "If I were crossing the desert and wanted to hire a donkey, what wage would I have to pay?" The donkeys withdrew a little distance to consult with each other and then a spokesman stepped forward. "Three bales of hay and three bags of dates would be a fair wage."

And Abba Kababa was very much pleased with their judicious conduct and their wise offer. But the king spoke again. "Now listen well. Tomorrow at sunrise I will start on such a journey, but I will not pay so much. Which one of you will go for less?"

And again the donkeys withdrew to counsel with each other and soon there was great confusion amongst them and much braying and kicking and biting each other. Finally, one particularly long-eared ass came forward and said that he would go for one bale of hay.

The king said, "Fool! That is a long journey. One bale of hay would not suffice for food alone, and there would be no profit."

"That is true," said the donkey, "but I want the business."

And ever since that day jackasses have been known as fools and "price cutters" known as asses.

---

showing that high levels of antibiotics were effective in producing increased growth in battery chicks when the low levels were not. Further, this response was found to occur only when fish meal was included in the diet. The phenomenon was evident in both clean and unclean quarters.

"Since the initiation of antibiotic growth studies two years ago at this station, it has not been possible to demonstrate any significant growth increases in chicks which can be attributed to low level antibiotics supplementation," Dr. Wisman said. "By increasing the level of antibiotic and using condensed fish solubles in the diet, significant growth increases now have been obtained."

Dr. W. A. Hardison, associate professor of dairy husbandry at VPI gave a report on milk replacements and calf starters. Dr. Hardison said that the more nearly a milk replacer duplicates the properties of whole milk, the more successful will be its use. To approximate whole milk a replacement feed needs to contain about 24% protein.

Considerable work has been directed to the development of milk replacements containing large amounts of nonmilk fats. Lard has been used successfully and it also has been shown that milk fat may be

(Continued on page 72)

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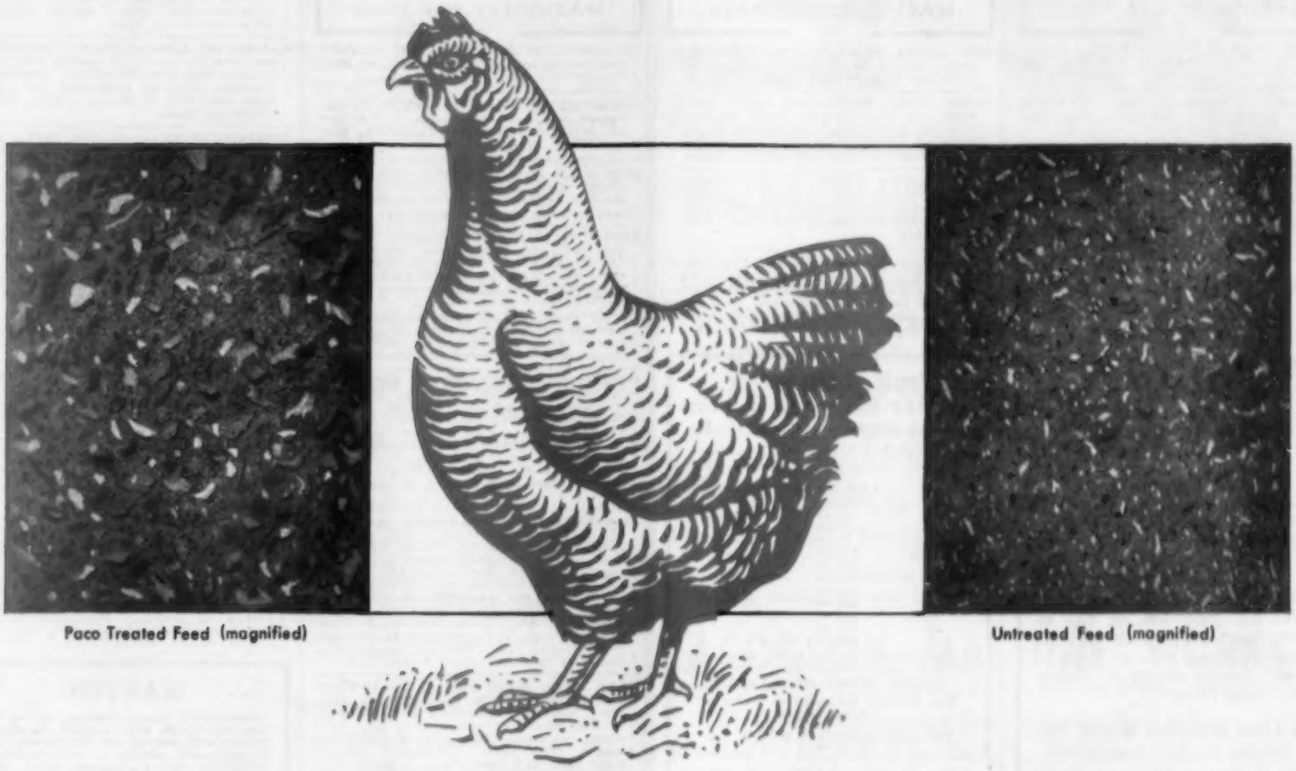

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2 No. 17 Ajax Jacobson
1 Capec

USED—IN OPERATING CONDITION
3 No. 416 Bauer .....$400 ea.
1 3SW Jay Bee $500
2 No. 17 Ajax Jacobson $300 ea.

REBUILT
1 No. 416 Bauer $900
1 3UX Jay Bee $550
1 3SW Jay Bee $700
1 3S Jay Bee $700
2 No. 17 Ajax Jacobson $550 ea.

NEW
1 3UX Jay Bee $900

Write for quotation on any of above "used, as is mills" rebuilt and guaranteed. A large stock of rebuilt motors available. Prices f.o.b. Lima, Ohio.

The Lima Armature Works, Inc.
142 East Pearl St., Lima, Ohio
"Over 30 Years of Continuous Service to the Feed and Milling Industry"

MACHINERY FOR SALE

ONE MODEL 28, NICKLE COB CRUSHER, brand new and in original crate, $250. Edinburg Grain Co., Edinburg, Ind.

USED STEEL ELEVATOR LEGS, BELT, cups and head drives. Good condition, 40% of new price. Height 60' to 137', capacity 3,000 to 14,000 bu. per hour. North Iowa Milling Co., Manley, Iowa.

1952 CHEVVY 2-TON, LONG WHEEL base. Over sized tires. Stake body. Bulk unloader. Low mileage, excellent condition. Honegger-Hanley Mills, Inc., Mansfield, Ohio.

FOR SALE—LARGE SPROUT-WALDRON Pellet Mill, 1949 model. Complete with motors, starters, coolers, shakers, dies, etc. All in perfect condition. One 1-ton Burton Mixer, 15-ton steam boiler. Tom Vint, P.O. Box 1251, Sioux City, Iowa.

Limited Quantity

TOTALLY-ENCLOSED MOTORS
at less than open motor prices
all 220/440 Volt—60 Cycles—
3 phase

H.P.	1,800 R.P.M.	1,200 R.P.M.
1	$51.00	$69.00
2	69.00	77.00
3	77.00	92.00
5	92.00	126.00
7½	126.00	151.00
10	151.00	192.00
15	192.00	298.00
25	298.00	341.00
30	341.00	430.00
40	430.00	
50	510.00	
60	635.00	

ALL STANDARD MAKES—REBUILT —BALL BEARINGS—NEMA FRAMES —NEW MOTOR GUARANTEE
For Further Information Write or Phone 2-4710

THE LIMA ARMATURE WORKS, Inc.
142 East Pearl St. Lima, Ohio
"Over 30 Years of Continuous Service to the Feed and Milling Industry"

MACHINERY FOR SALE

DRYERS AND DEHYDRATING PLANTS, lease or sale, new or used. Pre-Fab Steel Co., Box 14, Corona Del Mar, Cal.

FEED MIXER, 1-TON CAPACITY, GUARanteed first-class throughout. 5 H.P. motor drive. Address 2774, Feedstuffs, Minneapolis 1, Minn.

FOR SALE — USED, ONE TON HORIzontal mixer in excellent condition, complete with electric motor, switches and loading leg. Box 276, Mackinaw, Ill.

FEED MIXER — LATE MODEL 1½-TON Howell Vertical Feed Mixer with 7½ H.P. motor and drive, all nearly new condition. Priced for quick sale at $595. Address 524, Feedstuffs, Minneapolis 1, Minn.

WHEN YOU ARE IN THE MARKET FOR new or used mill machinery, electric motors or any other equipment, write J. E. Hagan Mill Machinery, Jefferson City, Mo.

WRITE US, WE HAVE WHAT YOU NEED in supplies for feed and flour mills. If it's new or used, buy it from Hughes, Wayland, Mich.

FOR SALE—RICHARDSON BAGGING AND Grain Scales. Steel bucket elevators. Horizontal mixers. Screw conveyors, motors and starters. Call 4-4893, Birmingham, Ala.

FOR SALE—ONE STANDARD HEIL SD 825 drying drum, complete with collector and furnace; one Heil Truck Type Self Feeder; one Fox Field Harvester. W. A. Caplis, Box 1312, Shreveport, La.

60 H.P. BOILER LEFFEL SCOTCH MArine 150-lb. Ray No. 5 Automatic Burner. New 1948, used 12 months, wood skids. Stack 28"x52'. A-1 condition. $3,500 f.o.b. Fort Wayne, Ind. Brooks Construction Co., 1133 Barthold, Fort Wayne, Ind.

BULK FEED BODY FOR SALE—10-FOOT Model SF-5. Company demonstrator, complete. Ready for operation. Equipped with 15-foot discharge auger. Two sets drop doors, making three separate compartments. ICC lights, directional signals, mud flaps and heavy-duty bumper. Contact K. Korte, Baughman Mfg. Co., Jerseyville, Ill.

FOR SALE—PELLET MILLS, TWO 50 H.P. Century Mills, and one 75 H.P. Century with California coolers; 3,000 lb. upright feed mixer; Richardson Automatic Scales; Union Special Sewing Machines; 9x24 and 9x30 three high roller mills; 20x24 Flaking or Crimping Rolls; steel elevator legs and 10 to 100 H.P. Hammermills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

BARGAINS — ROBINSON MODEL J. J. Mixer with power screen and complete 16" bucket elevator, bottom discharge, pedestal mounted. Size 24"x26"x7'. Capacity 1,200 plus lb. Powered by 7 H.P., 200-volt electric motor, $375. Also ribbon mixer 48"x17½"x20" with pulley, $45; and ribbon mixer 40"x16"x16" with pulley and brush attached to ribbon $18. F.o.b. Winona, Minn. The Ward Company.

FOR SALE—ONE USED KEWAUNEE 30 H.P. low pressure boiler, complete with vaporstats, ignitors, magnetic control valve, oil heater, Enterprise burner, complete draft regulator; price $1,750. One used Wm. Bros 50 H.P. high pressure boiler complete with controls, including stoker; price $1,500. One used Bernard Lee 8"x16" LePage cut roller mill; price $100. One used Schriver filter press; price $450. Northwest Cooperative Mills, Inc., 636 North Fairview Ave., St. Paul 4, Minn.

MOTOR TRUCK SCALES — NEW: WITH steel lever system and structural steel weigh-bridge. 20-ton—$525; 25-ton—$782. Conveyor belting—new. Save 25%; Fresh stocks of 4-ply, 28-oz. duck, 1/64"x1/32" covers. Famous brands at deep cut prices. 16" belt, $2.62/ft.; 18" belt, $2.90/ft.; 24" belt, $3.76/ft.; 30" belt, $4.60/ft. Write for free sample. Troughing idlers and return rolls. New, 25% below list price. All steel 5" roll diameter. Interchangeable with other well known makes. Replaceable ball bearings. Either sealed type or with Alemite fittings. Idler prices—16" belt, $17.25; 18" belt, $18; 24" belt, $18.75; 30" belt, $19.50; 36" belt, $20.25; 48" belt, $21.75. Return roll prices—16" belt, $6.75; 18" belt, $7.13; 24" belt, $7.50; 30" belt, $8.25; 36" belt, $8.75; 48" belt, $10.25. Write for catalog. Bonded Scale Co., 124 Bellview, Columbus, Ohio.

MACHINERY WANTED

SEWING MACHINE, DOUBLE TAPE closure, with conveyor. Net weighing scale for 5- to 10-lb. bags. Quote price and condition. Marshall's Feed Mill, Horseheads, N. Y.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

HELP WANTED

SALESMAN TO TRAVEL 75-MILE RADIUS from Sioux City, Iowa. Address 560, Feedstuffs, Minneapolis 1, Minn.

SALESMEN OR SALES AGENTS CALLING on feed industry for a line of vitamins and feed supplements, etc. Commission basis. Address 585, Feedstuffs, Minneapolis 1, Minn.

SALESMINDED ASSISTANT TO TAKE charge of custom mill end. Excellently arranged, clean, heated. Formula and private feeds handled. Top salary and bonus. Vacation this year. Martin Hatchery Mill, Maquoketa, Iowa.

SALESMEN AND JOBBERS, TERRITORies open for premium quality GRADE A CALF MILK-REPLACER. Established Product. Complete promotion. Tri Associates, Inc., 4500 Pillsbury Avenue, Minneapolis 20, Minn.

COMPETENT NUTRITIONIST WITH Ph.D. to locate in Southeast. Must be middle-aged, aggressive, experienced in formulating and selling poultry, dairy and hog feeds. Salary open. Please state qualifications, experience and salary expected. All replies confidential. Address 567, Feedstuffs, Minneapolis 1, Minn.

THREE SALESMEN WANTED BY PROMInent fast growing feed mill machinery manufacturing firm on an exclusive territory basis to work in Florida, Georgia, Alabama, Louisiana and Mississippi. Must have experience and ability in millwright and mechanics. Address 528, Feedstuffs, Minneapolis 1, Minn.

SOUND, WELL ESTABLISHED MARINE products manufacturer, located on East Coast, has excellent opening for a research chemist well grounded in nutrition and vitamin chemistry. Capable of setting up own laboratory and instituting control and modification procedures. Replies confidential. Address 521, Feedstuffs, Minneapolis 1, Minn.

SALES MANAGER NEEDED FOR MEdium-sized feed operation. Should be able to talk to dealers and feeders, and set up and supervise sales territories. This is a permanent position with a future for a sincere individual. We operate in the vicinity of Buffalo east. Our ideas of starting salary $100 per week and expenses. Your reply will be handled by one person in strictest confidence. Address 588, Feedstuffs, Minneapolis 1, Minn.

WANTED

Maintenance superintendent for medium size feed mill located in East. Salary will depend on knowledge, experience and ability in millwrighting, electricity and mechanics. Write Address 355, Feedstuffs, Minneapolis 1, Minn.

Sales Manager

for midwest co-op feed and fertilizer manufacturer and jobber of complete farm supplies line. Sales executive experience and ability to develop complete sales program are definite requirements. Will have complete charge of sales and advertising. Now traveling three salesmen. Excellent opportunity if you are ambitious and have sales executive background. All replies confidential. Address 577, Feedstuffs, Minneapolis 1, Minn.

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EXCLUSIVE TERRITORIES
PROFITABLE PRODUCTS
VITAMINS & SPECIALTIES
NATIONALLY ADVERTISED
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TERRITORIES OPEN
NEW YORK
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REPLY TO ADDRESS 597,
FEEDSTUFFS
Minneapolis 1, Minnesota

FOR SALE COMPLETE EQUIPMENT

All Machinery **MODERN 4,000 BARREL FLOUR MILL.** Formerly operated as **ARROW MILLS DIVISION, CONTINENTAL GRAIN COMPANY,** Houston, Texas

The following Machinery:

- 22 Stands Great Western Roller mills, size 10x36 and 10x42, Style A drive, all with V-belt differentials
- 22 stands 10x36 and 10x42 Nordyke ball bearing roller mills with style B drive
- 4 10x10 Simons roller mills
- Complete Hoffman 30 HP vacuum cleaning system
- Carter Disc separators
- Merchen scale feeders
- Richardson Hopper scales
- American blowers in all sizes
- Nordyke Bran Dusters
- 2 4x17 Great Western Hi-Speed bolters
- 4x22 Wolf rebolt sifter
- Draver Feeders in all sizes
- 4 5 HP BF-2 Flour entoleters
- 40 Dust Collectors, 40" and 48" long cones
- Allis Chalmers speed changers, 2 HP size
- 8 Syntron Vibrators and Rectifiers
- 12" JayBee Hammer Mill
- 30 HP Gruendler Hammer Mill
- 50 HP Jacobson Universal Junior Hammer Mill
- 100 Bucket Elevators, all sizes
- 7 Nordyke Purifiers, 34x76 and 42x76
- Several Belgium Purifiers
- 6 Rotor Lifts, 6"x15' and 9"x15'
- 4 GM Agitators
- Screw Conveyor
- Line shafting
- Pulleys and drives
- Niagara Gyro sifter
- Nordyke Flour Packers
- Two 250 H.P., 290 R.P.M., 2,300 volts G.E. motors with all controls
- Four 60 H.P. Century and Allis motors, 1,200 R.P.M., 2,200 volts
- Superior Separators
- American Reduction drives
- Magnetic separators
- All sizes leather belting
- Many miscellaneous items and several good pieces, mixers and steamers, etc., available from Feed Mill

The **COMPLETE EQUIPMENT** of the entire flour mill is **TO BE SOLD.** All prices F.O.B. Dock, Houston, Texas. Transportation, crating and loading charges extra. Sale in charge of P. J. Montgomery. Address all inquiries P. O. Box 5176, Houston, Texas. Phone or wire Continental Grain Company for complete information on any item.

Sale Starts March 7th, 1955

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BABY CHICKS FOR SALE

BABY CHICKS—AS HATCHED OR SEXED—Five popular breeds and one hybrid. Quality - Quantity - Service. Wholesale prices. Milford Hatchery, Liberty Road, Randallstown, Md.

SITUATIONS WANTED

GOOD SIDE LINE FOR OHIO—MANUfacturer's agent now calling on feed mills, hatcheries and milk plants in Ohio. Prefers poultry remedies, minerals or special feeds. George C. Moore, 30 Bonner St., Dayton 10, Ohio.

YOUNG EXECUTIVE, AGRICULTURAL college graduate with 12 years' practical experience with good record. Knows livestock, poultry, feeding, feed manufacturing and sales. Seeking responsible position in Chicago area. Address 592, Feedstuffs, Minneapolis 1, Minn.

TOP EXECUTIVE—AGE 41, DESIRES POsition with medium size organization. Many years' administration background, advertising, promotion, production, service and general sales management. Considered expert in both poultry and turkey service management, also well-versed on all other livestock feed promotion. Have excellent record on merchandising and sales management of a nationally known dry dog food. Not only have vast knowledge of feed business but equally experienced in many allied fields depending on needs of poultry, turkey and livestock industries. Address 593, Feedstuffs, Minneapolis 1, Minn.

BUSINESS OPPORTUNITIES

FEED AND BEAN PROCESSING PLANT—New, modern. Near Denver. Irrigated district. Million dollar volume. Robert Morin, Ordway, Colo.

NEW BUILDINGS AND MILL EQUIPMENT in southern Michigan. Excellent location for expansion. Priced reasonable. Address 446, Feedstuffs, Minneapolis 1, Minn.

FOR SALE—FEED BUSINESS, 50 MILES north of Denver, Colo., in heart of irrigated country. Modern building, machinery and attached small capacity elevator. Address 403, Feedstuffs, Minneapolis 1, Minn.

FOR SALE — ELEVATOR, FEED MILL and store located in heart of the best pork and beef feeding area in Iowa. Plant new in 1947. Equipment all in excellent shape. Stanwood Feed & Grain Co., Stanwood, Iowa.

FOR SALE—WHOLESALE FEED MANUfacturing plant, sound, well-established business, new building, well equipped, new trucks, established 16 years. Shows an annual net of 25% of the price offered, business has an annual potential, showed 25% increase last year, can be doubled in two years. All free and clear. Reason for selling, retirement. Address 586, Feedstuffs, Minneapolis 1, Minn.

CUSTOM FEED MILL FOR LEASE

One of Midwest's best set-ups, past sales, potential. 5-year average yearly gross profit $51,137. Leased on profit sharing basis with option to buy. Send full particulars as to experience and capital available. Address 575, Feedstuffs, Minneapolis 1, Minn.

Standard steel elevators, belt and bucket type, available from stock. Ten Heavy Duty sizes, from 300 to 10,000 Bu./Hr., for continuous service and four Light Duty sizes, from 110 to 750 Bu./Hr., for intermittent service. We also manufacture screw conveyors and hoppers. Send your requirements for complete information.

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Sheet Metal Fabricators
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PORT HURON, MICHIGAN

Machinery Association Committee Heads Named

CHICAGO — Appointments of committee chairmen of the Grain Processing Machinery Manufacturers Assn. have been announced by Walter C. Ronk, Barnard & Leas Manufacturing Co., Cedar Rapids, Iowa.

Mr. Ronk made the appointments after being elected president at the association's recent annual meeting in Chicago.

The committees and their chairmen are: special scholarship, George F. Thomas, Prater Pulverizer Co., Chicago; trade relations, Lloyd Jaffe, Sidney (Ohio) Grain Machinery Co.; technical committee of engineers, Ralph E. Williams, B. F. Gump Co., Chicago; conventions and exhibitions, Ruxton R. Strong, Strong-Scott Manufacturing Co., Minneapolis; labor relations, Russell B. Maas, Screw Conveyor Corp., Hammond, Ind.; membership, Mr. Thomas; national defense, Harold M. Soars, Sprout, Waldron & Co., Inc., Muncy, Pa., and public relations, Irl S. Daffin, Daffin Manufacturing Co., Lancaster, Pa.

Chicago Superintendents' Group to Meet March 18

CHICAGO—Rupcich's Restaurant, 106th & Indianapolis Blvd., Chicago, will be the site of the next meeting of the Chicago Chapter of the Grain Elevator & Processing Superintendents. The meeting will be held March 18, and will convene at 6 p.m.

The program will consist of colored movies of fishing and hunting in Northern Canada. Those who plan to come are urged to get their reservations in early.

Soybean Blue Book For 1955 Published

HUDSON, IOWA—The latest information on the soybean crop and industry is presented in the 1955 edition of the Soybean Blue Book, published by the American Soybean Assn. here, and just off the press.

Assembled in the 160-page book are the latest available statistics on production, prices and utilization of soybeans, meal and oil, according to George M. Strayer, executive vice president. There are directories of soybean processors, oil refiners, and manufacturers using soy products in their operations, as well as firms offering their services and products to the soybean industry.

Included again this year is a list and descriptions of most U.S. soybean varieties now in production and a map showing recommended varieties for most soybean production areas.

The book is available at $3 per copy from the American Soybean Assn., Hudson, Iowa.

BUYS INDIANA BUSINESS

BRISTOL, IND.—Olin Miller, who has operated the Seybert Mill & Feed Elevator in the New York Central system freight building here has bought the business. Noble Sherck has formed a partnership with Mr. Miller and the business will be continued as Miller & Sherck Co.

Jacobson MOBILE MOLASSES BLENDER

Puts Any Custom Miller Into the Molasses Blending Business

- Requires Minimum Installation
- Operates with Present Mixing Equipment
- Wheels Easily From Mixer to Mixer
- Blends Normal Custom Amounts of Molasses
- Thorough Impregnation by Pressure Input
- Blends Without Balling or Mixer Buildup

Floor space—56"x26", including 19" hopper Extension
Height of intake hopper, 32"; 10x10" discharge opening.

On display with other Jacobson items
in booths 155 and 156—National Feed Industry Show

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Manufacturers of UNIVERSAL, AJACS and MASTER Hammermills
45 Years of Continuous Service to the Feed Industry
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QUALITY • TESTED • FRESH • LOW FFA CONTENT
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ATLAS Field-Test Knotless BALER TWINE
Acclaimed for performance
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Feedstuffs

96 Connecticut St., Seattle, Wash. MAin 0737

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VIRGINIA MEETING

(Continued from page 68)

replaced with hydrogenated plant fats. The fiber content of milk replacement feeds must be low. Virtually all milk replacements are fortified with a calcium and phosphorus supplement, trace minerals, vitamins A and D and antibiotics. To be successful, a good calf starter must be fed with a milk replacement.

"The Little Things"

Dr. Wilgus followed his talk of the previous day with a discussion of the "little things in poultry nutrition." During the last two decades, he said, production of milk has been increased 25%, meat animals 60%, eggs 65%, poultry meat 100% and turkeys 150%. This has been made possible by the developments in nutrition, breeding, disease and parasite control, marketing, engineering and management.

Dr. Wilgus talked about the improvements in production efficiency, improved nutrition for broilers, and improved breeding for broilers. The improvement in egg production probably is due more to breeding and management than to nutrition, he said. The profound effect of breeding on efficiency of production cannot be equalled by improvements in the ration—but the latter plus good management are essential to expression of the genetic potentialities of any animal.

The field of nutrition has entered the era of refinement. This is evidenced by the ability now to express requirements increasingly precisely in terms of calories, grams, milligrams, micrograms or units; by improvements in processing important ingredients such as protein supplements so that they are more nutritious; by efforts to relate relatively rapid laboratory assays for ingredient quality to biological value; by attention to unidentified growth and reproduction factors; by reexamination of vitamin requirements, such as A and E; by studies of "insurance additives" such as antioxidants to assure improved utilization; and by studies on inter-relationships of nutrients.

Dr. Wilgus said the effects of management practices on efficiency of production can exceed that of nutrition or breeding. A few examples are: (1) Reducing feed additions to troughs from full to one third full reduced feed wastage from 45% to 2%. (2) Increasing floor space from .5 to 1-1.25 sq. ft. per broiler increased final weight 10% and grade A birds 9%; decreased feed required per pound of broiler .1 lb.; lowered moisture in litter as much as 300%. (3) Debeaking broilers gave 11% more grade A's on .1 lb. less feed per pound of broiler. (4) One rat may eat or destroy as much feed as two laying hens. (5) Lack of full access to drinking water can decrease gains and feed efficieney. (6) Cooling water in dry hot weather may improve gains of beef cattle by 28%. (7) Keeping animals comfortable and confident in the presence of humans can increase gains. Following the morning session there was a panel discussion on topics covered. Moderating the discussion was Harry Moore of the poultry department of VPI.

During the afternoon session, James Boehling, F. H. Boehling Co., Richmond, who is chairman of the Virginia State Feed Assn. nutrition school committee, presided. The first speaker was C. F. Bruce, supervisor of the feed control program, Virginia Department of Agriculture in Richmond. Mr. Bruce described the feed control program in Virginia.

Feed Ingredients

Dr. C. E. Holmes, poultry husbandry department, VPI, talked on poultry feed ingredients and why they are used. He discussed the use of several items from the standpoint of price, quality, availability and palatability.

Dr. G. C. Graf of the dairy husbandry department of VPI gave a review of feed ingredients and why they are used in dairy feeds. Dr. C. C. Brooks of the animal husbandry department of VPI gave the same type of discussion on the comparative values of swine and beef feeds.

FEED MAN DIES

TEXARKANA, ARK. — Walter C. Word, 57, co-owner of the South & Word Feed Store here, died recently.

FORSTER HAMMERMILLS MATCH NEW FEED PLANT EFFICIENCY

New push-button type feed mills are efficient time and labor savers . . . and this modern efficiency is fully matched by Forster Hammermills. Whether you are building a new feed mill or re-equipping an old one, you will want to investigate the Forster grinder. Study its unmatched record for long life and low cost operation before you buy any hammermill. We will be glad to give you full information on request.

FORSTER MANUFACTURING CO.

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CHECK THESE MAJOR FEATURES . . . .

✓ Sturdy dust-tight construction. Heavy cast iron base. Precision machining for vibrationless operation.

✓ Oversize antifriction bearings. Bearing seats perfectly journaled.

✓ Main shaft made of alloy shockproof steel.

✓ Hammers reversible. Made of specially processed steel for fine cutting edges and long life.

✓ Screens easy to change. Closely and accurately perforated. Special heavy-gauge steel.

FIVE SIZES
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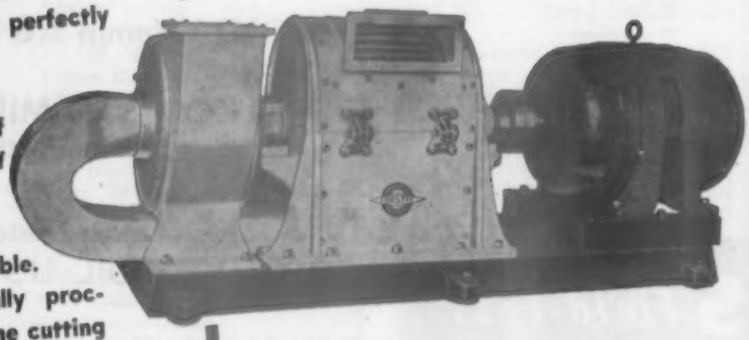

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FEEDSTUFFS

W. E. Huge

Ed Huge

THE FACE IS FAMILIAR—The Huge brothers of Central Soya Co. and McMillen Feed Mills, though not twins, look quite a bit alike—at least to the camera. That's how Feedstuffs (page 66) got confused last week in reporting that Ed Huge had been named manager of Dixie Pride Mills, Flowery Branch, Ga., owned by the Central Soya-McMillen firm. This story is true; only the pictures had been changed. Pictured, by mistake, was W. E. Huge, his brother, who is vice president in charge of commodity purchases and soybean oil meal sales for Central Soya. Ed Huge's promotion follows 13 years' experience with the firm in various capacities.

Sharp Upturn in Corn Acreage Indicated

DAVIS, CAL. — California's corn acreage is expected to double this year, according to Dr. Dale Smeltzer, assistant professor of agronomy at the University of California. The corn crop is at a point where cotton, currently the state's top money crop, was 10 years ago, he said.

Restrictions on acreage of cotton, wheat, sugar beets and rice will furnish more land for corn planting in 1955, the agronomist said.

FEED WHEAT

(Continued from page 1)

sidered such a program and sought a reaction to it, is a sign that something has to give at some point in both the wheat and cotton price support programs.

This week's statement by USDA is merely a dose of paregoric to the sick baby. It does not answer the question. And the fact that USDA would even give consideration or lip service to a feed wheat program is an ominous sign.

The official text of the USDA statement this week follows:

"The U.S. Department of Agriculture announced that it will not initiate a program for the subsidized distribution of Commodity Credit Corp. wheat stocks for feed use.

"The department has recently received a number of recommendations regarding possible feed-wheat programs. Today's announcement is intended to clear up any uncertainties which may have developed as a result of these recommendations.

"The controlling legislation sets up quite definite standards governing the sale by CCC of its stocks of basic or other storable commodities, such as wheat. In general, CCC wheat cannot be sold domestically at less than 105% of the price support level plus handling charges. There are exceptions for commodities which are going out of condition, and for sales for feed use under special conditions. Sales for feed use, however, are authorized only if such sales will not substantially impair any price-support program."

"The decision not to initiate a subsidized feed wheat program at this time is in line with the provisions and the intent of the controlling legislation.

"Some minor quantities of wheat which was not of accepted food-use quality have in the past been sold for feed use, at feed price levels. Some relatively small quantities of CCC-owned wheat which is not suitable for storage, in selected locations, are currently offered for sale in the department's monthly domestic sales list, for feed use at market prices.

"Other than a continuation of these relatively minor special sales, however, the department does not plan a wheat feed-use program."

ALLIED MILLS

(Continued from page 1)

operated by a wholly-owned subsidiary, Allied Mills, Inc., of Pennsylvania.

It will be served by the Pennsylvania and the Baltimore & Ohio Railroads.

Mr. Buist said construction will be of reinforced concrete and embody the most modern precision feed making equipment, including "remote control" weigh-feeder equipment.

There will be facilities so that shipments of in-bound ingredients and out-bound Wayne Feeds can be handled in bulk, both in trucks and railroad cars. Feeds will be packed in various sizes of paper, cotton and burlap bags.

"We are pleased to add the Everson operation to our group of feed manufacturing, soybean processing and alfalfa processing plants," said Mr. Buist. "It is evidence of our confidence in the sound future of the feed business."

He pointed out that the Everson location offers shipping advantages for taking care of the "continuing increase in demand" for Wayne Feeds from dealers now served from existing facilities. He said it will enable the company to develop and expand sales activities in eastern territories, particularly Virginia, West Virginia, Maryland and Pennsylvania.

Jones-Hettelsater Construction Co., Kansas City, is the general contractor.

BROILER TESTS

(Continued from page 1)

the rations used in the field trial at Salisbury are completely practical. Furthermore, only male broilers were used in the College Park experiments.

"You have probably heard that at College Park we produced birds averaging 3 lb. in weight in 7½ weeks, with only 4.8 lb. of total feed per bird," Dr. Combs told the group.

"Although results here at Salisbury were not nearly so dramatic, they represent a significant improvement in performance with practical rations and broilers reared under practical conditions."

New Hampshire chicks and New Hampshire x Cornish crossbreds were used in the Salisbury field trial. All chicks were purchased from a commercial hatchery.

The nutritionists have given special attention to energy-protein ratios in these experiments. Based on the results of the field trial which involved different protein-energy ratios as an experimental variable, it appears that broiler starting mashes should contain approximately 42 calories of productive energy for each percent of protein in the feeds, the nutritionists said. Starting rations were fed up to seven weeks of age.

The finishing rations which gave best performance ranged from 48 to 50 calories of productive energy per pound of feed for each percent of protein in the ration. Finishing rations were fed from seven to nine weeks of age.

Pontotoc Company Buys Oil Mill Near Memphis

MEMPHIS — Riverside Oil Mills, largest industry in Marks, Miss., near Memphis, has purchased the Pontotoc (Miss.) Cotton Oil Mill in its first expansion from local operation.

Completion of the deal was announced this week by William King Self, Riverside president.

Considerable money will be spent in enlarging and modernizing the newly-acquired plant and an elevator will be built for the storage of soybeans, Mr. Self said. The plant now processes cottonseed only.

Buford Furr, who was president of the Pontotoc firm, will be retained as manager. The name will be changed to Pontotoc Oil Mill.

John Dumas of ADM Feed Division Dies

MINNEAPOLIS—John Dumas, 66, of the Archer-Daniels-Midland Co. feed division died March 10. Mr. Dumas was assistant sales manager for Minnesota and South Dakota.

He first entered the feed business in 1907, with Dickinson Feed & Seed, Minneapolis. Later, after World War I service with the air corps, he was with Pillsbury Mills, Inc., and the Heidbrink Chemical Co. He rejoined the Dickinson company in 1933 and then went with ADM when that firm purchased the Dickinson mill in 1938.

Mr. Dumas died following an operation. Funeral services will be held Monday, March 14. He was a native of Hudson Falls, N.Y.

James N. Woods

SALES MANAGER—Irl A. Daffin, president and general manager of Daffin Manufacturing Co., Lancaster, Pa., has announced the appointment of James N. Woods as sales manager of the firm's stationary milling equipment division. Mr. Woods' duties will include coordinating the expansion of Daffin manufacturing industrial hammer mill division and sales of the company's new packaged feed manufacturing plants for stationary installations. He was formerly eastern sales manager for Dixie Machinery Manufacturing Co., and prior to that, was associated with his brother as the western distributor for J. B. Sedberry Co. His home is in New Hope, Pa.

OILSEED SUPPORTS

(Continued from page 1)

announcement of the new support levels for the coming year's crops.

Previously, as Feedstuffs reported, it was thought that soybeans and flaxseed would be supported about as follows: Soybeans, at a national farm average of $2.02-2.04 bu., and flaxseed at 65% of parity, or approximately $3.22 bu. at Minneapolis. Cottonseed and cottonseed products were not to have been supported.

It also was learned that CCC had determined that it would not attempt any incidental price supporting of soybean products, such as an oil buying program.

The proposed support schedule quoted above was not confirmed finally in official USDA circles. But these plans were obtained from reliable sources and they are likely to be the basis from which further discussions of the issue will take place.

Turkey Poults Hatched and Eggs Set, Heavy and Light Breeds, in 11 Reporting States

Week ending—	Penn H	Penn L	Ohio H	Ohio L	Minn H	Minn L	Iowa H	Iowa L	Va. H	Va. L	S. C. H	S. C. L
Poults hatched (thousands)												
Jan. 15	**	12	0	**	33	53	**	0	23	77	28	**
Jan. 22	**	10	0	**	59	56	**	0	25	85	32	12
Jan. 29	6	7	0	**	59	59	**	**	24	93	23	**
Feb. 5	13	7	**	**	71	56	47	**	30	73	30	**
Feb. 12	15	9	**	**	61	67	96	**	23	73	32	**
Feb. 19	13	**	19	**	102	61	151	**	29	63	38	**
Feb. 26	17	8	18	**	†133	68	160	0	28	68	30	**
Eggs set (thousands)												
Feb. 5	27	12	38	23	295	93	346	0	43	151	78	**
Feb. 12	30	19	66	**	415	66	349	**	55	92	65	0
Feb. 19	29	17	73	32	464	67	356	**	70	102	70	0
Feb. 26	30	14	78	**	‡577	61	391	**	81	95	68	0

Week ending—	Texas H	Texas L	Oregon H	Oregon L	Calif. H	Calif. L	Other states* H	Other states* L	Total 11 states H	Total 11 states L
Poults hatched (thousands)										
Jan. 15	0	**	0	**	87	30	17	88	125	265
Jan. 22	**	**	0	**	138	27	13	39	267	235
Jan. 29	0	6	**	**	118	35	40	41	266	236
Feb. 5	**	**	26	13	139	33	23	53	393	235
Feb. 12	**	**	48	**	122	20	20	47	409	215
Feb. 19	18	31	20	**	159	28	10	29	559	211
Feb. 26	37	23	35	**	204	32	14	42	674	239
Eggs set (thousands)										
Feb. 5	92	23	205	**	442	**	23	99	1585	409
Feb. 12	122	62	225	**	519	**	29	98	1875	326
Feb. 19	183	34	279	**	668	41	50	51	2232	334
Feb. 26	227	33	342	**	611	50	78	67	2393	320

**Not published to avoid disclosing operations of individual hatcheries.
*Includes data marked ** and all data for Missouri and Washington.
†Includes 49,000 broad white poults reported separately only in Minnesota.
‡Includes 94,000 broad white eggs (see footnote †).

THE FEED MARKETS

★ ★ ★ ★

Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

ALFALFA MEAL

Boston: Demand fair; supply tight; dehydrated, 17% $76.50; suncured, 13% $51.

Seattle: Demand slow; trend easy; supply good; 15% protein suncured $46 ton, dehydrated 136,000 A units $65 ton, both delivered, carlots.

Kansas City: Demand fair; offerings satisfactory, although of moderate volume; trend in price slightly lower; 17% dehydrated alfalfa meal with 100,000 units of vitamin A guaranteed on arrival $61.50@65, sacked, Kansas City; no A guarantee $48@50, sacked, Kansas City; No. 1 fine ground suncured $41@42, sacked, Kansas City; and No. 1 ¼-in. $37@39.50.

Philadelphia: Demand dull; supply fair; 17% dehydrated $76.

Buffalo: Demand poor; trend steady; supply fair; $79.50, sacked, Boston.

Cincinnati: Demand fair; trend steady to easy; supply adequate; 17% dehydrated, 100,000 vitamin A $72.55@74.55; 17% dehydrated, no A $67.55; 13% fine suncured $40@43.

Indianapolis: Demand moderate to fair; trend steady to higher; supply adequate; 13% $47, 17% $65.

Omaha: Demand slow; supply ample; 17% dehydrated, 100,000, burlap or papers, dry $62@64, greased $64.50@66; 17% dehydrated, non A, burlap or papers, dry $60, greased $63.50; No. 1 fine ground suncured $40; No. 1 ¼-in. $37; No. 2 ¼-in. $33.

Chicago: Demand slow; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $66.50@67; 17% with no A guaranteed $59.50@61; 15% suncured $43.50@44; 13% fine ground suncured $41@42.

Memphis: Demand poor; trend down; supply adequate; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $68.25.

St. Louis: Demand for dehydrated fair, suncured slow; supply of dehydrated limited, suncured ample; dehydrated, 17%, 100,000 A $67.50 ton; suncured No. 1 fine ground, 13% $47 ton, f.o.b. St. Louis.

Minneapolis: Prices eased off this week, with demand light to fair and offerings plentiful. Arrival of some new crop Texas meal on the southwestern market put some pressure on prices. Quotations: 17% dehydrated, 100,000 units of vitamin A guaranteed $66@69.50, granules $71.50, oil treated $72.50; 50,000 units of vitamin A $57.50, non-guaranteed $54.50; 15% suncured No. 1 $48.50, No. 2 $43.

Portland: Demand slow; supply ample; trend unchanged; new crop, 15% suncured $36, f.o.b. Idaho; 15% suncured $42, f.o.b. California; dehydrated $52, f.o.b. California.

Los Angeles: Demand moderate; trend stronger; supply adequate; 15% suncured $42.50@44; 17% dehydrated $55.

Ft. Worth: Demand poor; supply sufficient; dehydrated, 17%, no A guarantee $56.50@57.50, Kansas-Nebraska origin, delivered Group 1, prompt; Texas, new crop, 17% 100,000 A $62.50, f.o.b. central Texas; suncured No. 1, 13% ¼-in. $45.50@46.50, delivered, Group 1.

New Orleans: Demand fairly good; trend unsettled to easier; supply light; 17% dehydrated, vitamin A guaranteed $71.50@73.50, non-guaranteed $68@60; 15% $54@56.

ALFALFA PELLETS

New Orleans: Demand slow; trend easier; supply ample; $73@75.

Omaha: Demand slow; supply ample; 17% dehydrated, 100,000 A, bulk $62@64, sacked $64.50@66.

BARLEY FEED

Ogden: Supply average; rolled $49@54, whole $42@47.

Portland: Demand slow; trend lower; supply ample; rolled $65, ground $63.

Seattle: Demand slow; trend easy; supply good; whole $63 ton, ground $63 ton, rolled $65 ton, all ex-warehouse, l.c.l., sacked.

Chicago: Demand good; supply fair; $46@48.

Baltimore: Demand good; supply fair; $54@55.

Boston: Demand and supply light; $54.

San Francisco: Demand fair; supply ample; rolled $66, ground $64.

Indianapolis: Demand light; trend unchanged; supply sufficient; whole $69, crimped $72, rolled $77.

New Orleans: Demand fair; trend steady; supply ample; pulverized feed barley $54@56.

Los Angeles: Demand fair; trend steady; supply ample; standard rolled $3.30, standard ground $3.36.

Philadelphia: Demand dull; supply fair; pulverized $55.

BLOOD FLOUR

New Orleans: Demand fair; trend easier; supply ample; $112@115.

Louisville: Demand slow; trend weak; supply ample; $105@110 ton.

BLOOD MEAL

Seattle: Demand and supply fair; trend steady; $120 ton, f.o.b. local packing plants.

Cincinnati: Demand fair; trend steady; supply adequate; $130@140.

San Francisco: Demand and supply fair; $6.25 a unit of ammonia; screened $6.15 a unit of ammonia.

Chicago: Demand fair; supply ample; $125@150.

New Orleans: Demand slow; trend steady to easier; supply adequate; $112@115, local plants.

Louisville: Demand slow; trend weak; supply ample; $105@110 ton.

Portland: Demand good; supply ample; trend unchanged; $135.

Los Angeles: Demand fair; trend steady; supply ample; $5.75 a unit of ammonia.

BONE MEAL

New Orleans: Demand good; trend easier to steady; supply limited; $55@57.50.

Omaha: Demand strong; supply limited; $95.

San Francisco: Demand good; supply fair; $55.

Louisville: Demand slow; trend steady; supply normal; $75@80 ton.

Cincinnati: Demand fair; trend steady to easy; supply adequate; $85@90 ton, sacked, f.o.b. Cincinnati.

Ft. Worth: Demand good; supply sufficient; $85, sacked, f.o.b. Ft. Worth.

BONE MEAL (STEAMED)

San Francisco: Demand good; supply ample; $75.

Boston: Demand slow; supply tight; $80, nominal.

Seattle: Demand steady; trend firm; supply good; $95 ton, ex-warehouse, l.c.l.

Louisville: Demand fair; trend steady; supply normal; $80@85 ton.

St. Paul: Market steady at $95 in large lots.

St. Louis: Demand good; supply adequate; $100@105 ton, sacked.

Ft. Worth: Demand unsatisfied; supply tight; best quality German production, 72% B.P.L., 14% phosphorus, 31% calcium $75, 100-lb. paper bags, ex-dock Houston, March and/or early April arrival.

Los Angeles: Demand fair; trend unchanged; supply ample; domestic $89.50.

Buffalo: Demand good; trend strong; supply limited; $95 ton, sacked.

Indianapolis: Demand slow; trend unchanged; supply sufficient; $99 ton.

New Orleans: Demand good; trend steady; supply ample; $75@80.

Chicago: Demand fair; supply short; $80@85.

BREWERS DRIED GRAINS

Ft. Worth: Demand slow; supply sufficient; 24% $59@60, prompt, delivered Ft. Worth.

Philadelphia: Demand dull; supply fair; $59.

Louisville: Demand dull; trend weak; supply ample; $54 ton.

Chicago: Demand slow; supply abundant; 24% $49@50.

St. Louis: Demand fair; supply adequate; $48 ton bulk, $53 ton sacked.

New Orleans: Demand poor; trend easier; supply adequate; $60@62.

Cincinnati: Demand poor; trend steady to easy; supply adequate; $57.

San Francisco: Demand fair; supply ample; $59.50.

Buffalo: Demand poor; trend unsteady; supply fair; $55, bulk, Boston.

Boston: Demand fair; supply adequate; 24% $59.50, 28% $60.50.

BREWERS DRIED YEAST

Boston: Demand slow; supply adequate; 11½¢ lb.

Louisville: Demand dull; trend weak; supply ample; 10¢ lb.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

St. Louis: Demand good; supply limited; 9¾@10¼¢ lb. in carlots, 10¾@11¢ lb. in ton lots, 11¾@12¢ lb., less than ton lots.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10¼@12½¢ l.c.l.

Buffalo: Demand fair; trend firm; supply adequate; $10.30 cwt.

Omaha: Demand good; supply poor; 11½¢ lb., carloads; 12½¢ lb., less than carloads.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢, l.c.l.

BUTTERMILK-CONDENSED

Los Angeles: Demand fair; trend steady; supply ample; 100-lb. drums $5.25; large barrels $4.50.

Ogden: Supply normal; $4.15, 100-lb. drum.

New Orleans: Demand fair; trend steady; supply ample; 100-lb. drum $5@5.25.

Indianapolis: Demand good; trend steady to unchanged; supply adequate; 66-lb. drum $3, in barrels $3.90 cwt.

San Francisco: Demand fair; supply good; $5.35 cwt.

Philadelphia: Demand moderate; supply fair; $4.25.

Chicago: Demand fair; supply plentiful; $3.25@3.50 cwt. in carlots.

Louisville: Demand good; trend firm; supply normal; $4.25 cwt.

Minneapolis: Market easier; demand dull; supply adequate; $11@11.50 cwt.

Boston: Demand and supply fair; $4.10 cwt.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $13.24, flour $9.42.

Buffalo: Crystals $13.95, flour $10.20.

Toledo: Crystals $15.52, flour $11.77.

Boston: Crystals $14.37, flour $10.62.

Limecrest, N.J.: Crystals $9.50, flour $5.74.

CALCIUM CARBONATE

Seattle: Demand steady; supply ample; trend unchanged; $14 ton, ex-warehouse, truck lots.

Cincinnati: Demand fair; trend steady; supply adequate; $8@9.

Los Angeles: Demand fair; trend unchanged; supply ample; meal and flour $10.53 ton, carloads; grits $13.03 ton, carloads.

Minneapolis: Plain $10; iodized (⅛ lb. KI per ton) $13.50; iodized-manganesed $15.05.

Chicago: Plain $8.55 ton in 100-lb. bags, delivered.

CHARCOAL

New Orleans: Demand quiet; trend steady; supply ample; 40-lb. bags oak charcoal $1.95; 50-lb. bags poultry $2.10.

Boston: Demand and supply light; $78.

San Francisco: Demand steady; supply ample; $59.50.

Chicago: Demand quiet; supply ample; poultry charcoal $93 ton in 50-lb. multiwalls.

Los Angeles: Demand quiet; trend unchanged; supply ample; oak $90 ton, 40-lb. bags.

COCONUT MEAL

Portland: Demand slow; trend lower; supply ample; $72.

Seattle: Demand slow; trend easy; supply limited; $75 ton, ex-dock, 30-day shipment from Philippines.

Los Angeles: Demand slow; trend weaker; supply increased; cake, ex-dock, spot $73@74, March $72@73.

San Francisco: Demand fair; supply ample; $75.

COD LIVER OIL (FORTIFIED)

Boston: Demand slow; supply good; 600 D, 2,250 A 22¢ lb.; 300 D, 2,250 A 21¢; 300 D, 1,500 A 18½¢.

New York: Trend steady; price per lb. in 55 gal. drums (413-420 lb.): 300 ICU, 1,500 A 18½@20¢; 300 ICU, 2,250 A 20½@22¢; 300 ICU, 3,000 A 22½@24¢; 600 ICU, 1,500 A 19½@22½¢; 600 ICU, 2,250 A 21½@23¢; 600 ICU, 3,000 A 23½@27¢; f.o.b. Massachusetts, Pennsylvania and New Jersey shipping points.

Dayton: Trend steady to firm; price per lb. in 55 gal. drums (410 lb.): 85 ICU, 850 A 17½@19½¢; 300 ICU, 1,500 A 19½@22¢; 300 ICU, 2,250 A 22@24¢; 300 ICU, 3,000 A 24@25½¢; 600 ICU, 1,500 A 20½@23¢; 600 ICU, 3,000 A 25@26½¢; f.o.b. Dayton.

CONDENSED FISH SOLUBLES

Boston: Demand quiet; supply scarce; 5¢ lb.

Los Angeles: Demand fair; trend steady; supply ample; 5¢.

CORN GERM MEAL

St. Louis: Demand good; supply limited; $52 ton bulk, $57 ton in burlap bags, St. Louis.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis; bulk basis $5 less)

Minneapolis: Feed $59.77, meal $70.77.
Atlanta: Feed $66.92, meal $77.92.
Birmingham: Feed $65.18, meal $76.18.
Boston: Feed $64.15, meal $75.15.
Chicago: Feed $54, meal $65.
Cleveland: Feed $61.04, meal $72.04.
Denver: Feed $63, meal $74.
Ft. Worth: Feed $61.50, meal $72.50.
Indianapolis: Feed $58.50, meal $69.50.
Kansas City: Feed $54, meal $65.
Louisville: Feed $60.11, meal $71.11.
New Orleans: Feed $62.88, meal $73.88.
New York: Feed $63.69, meal $74.69.
Norfolk: Feed $63, meal $74.
Philadelphia: Feed $63.23, meal $74.23.
Pittsburgh: Feed $61.50, meal $72.50.
St. Louis: Feed $54, meal $65.

CORN OIL MEAL

New Orleans: Demand poor; trend steady; supply adequate; $63.50@64.

Louisville: Demand dull; trend steady; supply ample; $61.81 ton.

Cincinnati: Demand poor; trend steady to easy; supply adequate; $62.86.

COTTONSEED OIL MEAL

Portland: Demand slow; supply ample; trend unchanged; $75, f.o.b. Los Angeles.

Ogden: Supply normal; 41% $78@83.

Seattle: Demand fair; trend steady; supply ample; $85.50 ton, delivered, carlots, 41% expeller process.

Indianapolis: Demand poor; trend weak to lower; supply sufficient; $79.50 ton.

Cincinnati: Demand poor; trend lower; supply adequate; $71@73.

San Francisco: Demand good; supply ample; $74.38.

Buffalo: Demand poor; trend lower; supply fair; $81.50, sacked, Boston.

Wichita: Demand moderate; supply sufficient; 41% old process $76.50; 41% solvent $74.

Omaha: Demand fair; trend improving; supply ample; 41% solvent $76, pellets $78.50.

New Orleans: Demand moderate; trend weaker; supply adequate; 41% $78@80.

Philadelphia: Demand and supply fair; $80.

Boston: Demand slow; supply adequate; $80.63.

Los Angeles: Demand slow; trend weak; supply adequate; $73@74.

Ft. Worth: Demand limited; supply sufficient; carlots, central and north Texas origin, 41% old process $73@74; solvent, 41% low gossypol, fat added $70@71, delivered Ft. Worth; pellets $2 additional.

Atlanta: Demand fair; trend weak; supply ample; 41% $75, sacked, immediate.

Louisville: Demand dull; trend weak; supply ample; old process $73.25 ton; new process $72.25, off $1 ton.

Chicago: Demand slow; supply good; hydraulic $74.50, solvent $72@73.

Memphis: Demand slow; trend weaker; supply ample; prime 41% protein, old process $64, sacked; new process, 41% solvent $62, sacked.

A & D FEEDING OIL

Boston: Demand slow; supply good; 600 D, 1,500 A 17¢ lb.; 300 D, 2,250 A 19¢; 300 D, 1,500 A 16¢; 300 D, 750 A 15¢.

Buffalo: Demand steady; supply adequate; 300 D, 750 A 19¢ lb.; 300 D, 1,500 A 21¢ lb.; 300 D, 2,250 A 24¢ lb.; 300 D, 3,000 A 27¢ lb.; 600 D, 4,000 A 32¢ lb.; straight vitamin A feeding oil 10½@11½¢ per M. U., drum lots, drums included, basis Buffalo.

Seattle: Demand and trend steady; supply ample; 300 D, 2,250 A 23¢ lb., 300 D, 1,500 A 19¢ lb., 300 D, 750 A 17¢ lb., all ex-warehouse, drums included.

Minneapolis: All with DPPD—straight A feeding oil 13¢ per million; 85D $1.18 gal.; 300 D, 750 A 17½¢ lb.; 300 D, 1,500 A 20¢ lb.; 300 D, 2,250 A 22¢ lb., single drum lots.

Chicago: Demand fair; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 10@11¢ a million units of vitamin A, l.c.l., packed in 55-gal. drums, f.o.b. Chicago, drums included.

Dayton: Trend steady to firm; price per lb. in 55 gal. drums (410 lb.): 300 ICU, 750 A 16½@18½¢; 300 ICU, 1,500 A 18½@21¢; 300 ICU, 2,250 A 21@23¢; 300 ICU, 3,000 A 23@24½¢; 600 ICU, 1,500 A 19½@22¢; 600 ICU, 3,000 A 24@25½¢; f.o.b. Dayton.

New York: Trend steady; price per lb. in 55 gal. drums (413-420 lb.): 300 ICU, 750 A 15@17¢; 300 ICU, 1,500 A 17@19½¢; 300 ICU, 2,250 A 19½@21½¢; 300 ICU, 3,000 A 21½@23¢; 600 ICU, 1,500 A 18@20½¢; 600 ICU, 3,000 A 25¢; f.o.b. Massachusetts, Pennsylvania and New Jersey shipping points.

D ACTIVATED ANIMAL STEROL, POWDERED

Kansas City: Demand fair; trend steady; supply adequate; 10½@11¢ lb.

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢; 3,000 ICU 18¢, warehouse.

New York: Trend steady; 1,500 ICU 10@13.6¢ bagged, 11@12¢ drums; 3,000 ICU 16@19¢ bagged, 17@18¢ drums, f.o.b. New Jersey.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: $49.50.
Coronet, Fla.: 17% $56, 14½% $48.
Houston: $65.50.
Wales, Tenn.: $64.35.

DICALCIUM PHOSPHATE

Cincinnati: 18% phosphorus $82@85.

Portland: Demand slow; supply ample; trend unchanged; $98.

Trenton, Mich.: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $90.30, f.o.b. Trenton, in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $79.55, f.o.b. Trenton in 100-lb. multiwall bags.

East St. Louis: Monocalcium or dicalcium phosphate, 18½% phosphorus $79.55 ton bagged, f.o.b. cars.

Adams, Mass.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Adams, in 100-lb. multiwall bags.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Columbia in 100-lb. multiwall bags.

Bonnie, Fla.: Demand improving; supply adequate; minimum phosphorus 20% $86 net ton; minimum phosphorus 18½%, granular $84.55. Freight equalized with closest producing point, carload basis.

St. Louis: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $90.30, f.o.b. St. Louis in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $79.55, f.o.b. St. Louis in 100-lb. multiwall bags.

Minneapolis: 20% phosphorus $96.19, 21% $100.49.

Chicago: Demand fair; supply adequate; stock food grade, 18.5% phosphorus, 20,000 lb. or more $79.55 net ton in 100-lb. papers, basis Chicago Heights, Ill.; less than 20,000 lb. $89.55 net ton; 21% phosphorus 20,000 lb. or more $90.30 net ton, basis Chicago Heights and Nashville, Tenn., less than 20,000 lb. $100.30 net ton.

DISTILLERS DRIED GRAINS

Boston: Demand spotty; supply irregular; domestic $78, Canadian $76.50.

Buffalo: Demand and supply fair; trend steady; $75.50, bulk, Boston.

Cincinnati: Demand poor; trend steady; supply somewhat limited; $70.

Louisville: Demand slowing up; trend weak; supply fair; bourbon, light $69 ton, dark $71, solubles $87.

New Orleans: Demand poor; trend strong; supply limited; $69@71.

Philadelphia: Demand and supply fair; $75.50.

San Francisco: Demand fair; supply ample; solubles $85.

DRIED BEET PULP

San Francisco: Demand good; supply fair; $48.96.

Buffalo: Demand good; supply poor; no quotations.

Boston: Demand slow; supply fair; $66.75.

Seattle: Demand good; trend firm; supply tight; $46.50 ton, delivered, carlots.

Atlanta: Demand fair; trend steady; supply ample; $68.50, sacked, Atlanta, immediate.

Cincinnati: Demand fair; trend steady to higher; supply adequate; $58.

Los Angeles: Demand steady; trend firm; supply limited; $52@53.

New Orleans: Demand good; trend steady; supply limited; $52@53, ex-dock.

Ft. Worth: Demand quiet; supply sufficient; carlots, 40-lb. papers $62, delivered Ft. Worth, March shipment.

Ogden: Supply normal; $47@52.

DRIED BUTTERMILK

Buffalo: Demand fair; trend steady; supply adequate; $12.25 cwt.

San Francisco: Demand fair; supply ample; $9.75 cwt.

Indianapolis: Demand light; trend downward; supply sufficient; $13 cwt.

Wichita: Demand slow; supply adequate; $8.50 cwt.

Louisville: Demand fair; trend steady; supply normal; $11.50@12 cwt.

Chicago: Demand slow; supply adequate; $11@11.50 cwt. in carlots.

Ft. Worth: Demand and supply limited; local production, nominal $12 cwt., f.o.b. Ft. Worth.

New Orleans: Demand slow; trend steady; supply plentiful; $11@12 cwt.

Ogden: Supply normal; $8.65, 100-lb. bag.

Boston: Demand fair; supply short; 11¢ lb.

Los Angeles: Demand fair; trend steady; supply ample; $9.75.

DRIED CITRUS PULP

San Francisco: Demand good; supply fair; meal $52.

Boston: Demand quiet; supply light; $58.

Buffalo: Demand and supply fair; trend steady; $61.10, sacked, Buffalo.

Atlanta: Demand good; supply limited; trend strong; pulp $49, meal $44, sacked, immediate.

Los Angeles: Demand good; trend firm;

supply light; f.o.b. southern California producers' plants: orange $45 sacked, $41 bulk.

New Orleans: Demand good; trend steady; supply adequate; $46.50@48.50.

DRIED SKIM MILK

Cincinnati: Demand and supply fair; trend steady; 11½@12½¢.

Portland: Demand good; supply ample; trend unchanged; $12.

New Orleans: Demand fair; trend steady to easier; supply adequate; $11.50@12 cwt.

Portland: Demand good; supply ample; trend unchanged; $12.

Philadelphia: Demand and supply fair; $12.75.

Louisville: Demand fair; trend steady; supply ample; $12.50@13 cwt.

Minneapolis: Market steady; demand limited; supply adequate; $11.50@12 cwt.

Chicago: Demand fair; supply adequate; $12 cwt. in carlots.

Los Angeles: Demand moderate; trend steady; supply adequate; $14.25.

San Francisco: Demand and supply fair; 14½¢ lb.

Buffalo: Demand fair; trend steady; supply adequate; $12.50 cwt.

Boston: Demand slow; supply tight; 13¢ lb.

DRIED WHEY

Boston: Demand fair; supply good; 6¾¢ lb.

Seattle: Demand steady; supply ample; trend unchanged; $7 cwt., ex-warehouse, L.c.l.

Kansas City: Demand fair; offerings adequate; straight grade $6.50 cwt.; partially delactosed $7.20 cwt.

Buffalo: Demand poor; trend steady to uncertain; supply fair; $6.50 cwt., delivered.

San Francisco: Demand steady; supply good; $7.25 cwt.

Cincinnati: Demand fair; trend steady to easy; supply adequate; $6.50.

Portland: Demand good; supply ample; trend unchanged; $6.50.

New Orleans: Demand fair; trend steady; supply ample; $6.50@7 cwt.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6.50 cwt., sacked, delivered Ft. Worth or any Texas point or in ton lots, f.o.b. warehouse, Ft. Worth.

Los Angeles: Demand moderate; trend steady; supply ample; $7.15, fortified; $7, unfortified.

Ogden: Supply average; $6.50, 100-lb. bag.

Philadelphia: Demand moderate; supply fair; $6.50.

Chicago: Demand fair; supply adequate; $6.50 cwt. in carlots.

Louisville: Demand fair; trend easy; supply ample; $6.50@7 cwt.

Minneapolis: Market steady at $5.75@6.25 cwt.

FIELD SEEDS

St. Louis: Demand good; supply adequate; timothy $18@19 cwt.; red top $50@52 cwt.; red clover $48@52 cwt.; lespedeza $15@16 cwt.

FISH MEAL

Boston: Demand active; supply tight; 58% $147, nominal.

Seattle: Demand slow; trend steady; supply fair; Canadian herring meal $2.50 a unit protein, delivered; blended and local production $2.40 a unit protein, Seattle.

Buffalo: Demand strong; trend steady; supply limited; $155 ton, bulk; $158, sacked.

Los Angeles: Demand good; trend strong; supply light; $2.45@2.50 a unit of protein.

Ft. Worth: Demand urgent; supply critically short; Peruvian 60% $160, f.o.b. truck or car, ex-dock, Houston, mid-March arrival.

Chicago: Demand fair to good; supply fair; menhaden fish meal, 60% protein, f.o.b. East Coast $147.50@150 ton; 60% blended West Coast $145; Northwest herring-salmon blend $145; herring meal 73% protein $2.35 a unit of protein.

Minneapolis: Market steady at $2.35 a unit of protein for 70% Canadian herring meal, West Coast; 60% meal $169, Minneapolis.

Louisville: Demand fair; trend stronger; supply normal; $165@170 ton.

Atlanta: Demand fair; trend steady; supply ample; 60% $156.85 sacked, April.

New Orleans: Demand fair; trend steady; supply ample; 60 to 65% $164@171.

Portland: Demand slow; supply ample; trend unchanged; $2.40, f.o.b. Vancouver; $2.45, f.o.b. California.

Indianapolis: Demand fair; trend unchanged; supply tight; $172 ton.

Cincinnati: Demand fair; trend steady; supply tight; $165.

Ogden: Supply average; $2.20 a unit, f.o.b. Coast; 65% $171@173.

San Francisco: Demand and supply fair; imported, March shipment $2.50 a unit of protein.

HAY

Boston: Demand slow; supply steady; No. 2 timothy $38@40, No. 1 $42.

Seattle: Demand improved; trend steady; supply good; $36 ton, delivered truck lots for U.S. No. 2 green.

Buffalo: Demand steady; No. 2 timothy $20 ton; No. 2 alfalfa $25@28; straw $10@14.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 timothy, new $27; first cutting No. 1 alfalfa $28; second cutting $33; fancy No. 1 red clover and timothy $31.50; No. 1 red clover $28.50; bright wheat or oat straw $14.

Wichita: Demand slow; supply insufficient; prairie $30@32, alfalfa $30.

Louisville: Demand dull; trend steady; supply ample; timothy, mixed timothy and clover, clover or local alfalfa, No. 1 $35, No. 2 $33; straw $14@15.

Ft. Worth: Demand slow; supply sufficient; carlots, baled, No. 1 alfalfa $45@50, No. 2 $46@48, Oklahoma origin; prairie, No. 2 $37@39; Johnson grass, nominal, No. 2 $36@38, delivered TCP.

Los Angeles: Demand good; trend strong; supply light to moderate; U.S. No. 1 $39@41; U.S. No. 2 leafy $37@39; U.S. No. 2 green $36@37; U.S. No. 3 $34@36.

Ogden: Supply normal; $1.30 bale; $25@30 ton in the barn.

Philadelphia: Demand and supply fair; as to quality $32.

New York: Demand steady on top grades, lower on medium grades; trend steadier; supply good; competition of supply from Canada failing off; medium grades attracting export interest; timothy, No. 1 $40@43, No. 2 $30@36, No. 3 $26@28.

St. Louis: Demand good; supply adequate; timothy and clover mixed $34@36 ton; alfalfa milling grades $20@25 ton; prairie $34 ton; straw $14@15 ton.

New Orleans: Demand good; supply adequate; trend stronger; timothy and clover $35.50@38; baled alfalfa $30@32; prairie $25@27.

HOMINY FEED

Indianapolis: Demand only fair; trend downward; supply sufficient; yellow $57, including state tags and used bags, white $58, ground corn $55 ton.

Memphis: Demand poor; trend soft; supply ample; white $54, yellow $57.50.

Chicago: Demand slow; supply plentiful; $52.50.

Louisville: Demand slow; trend easy; supply ample; $56.50@57 ton.

New Orleans: Demand good; trend steady; supply limited; $59@61.

Omaha: Demand good; supply limited; $48.50 bulk, $55 sacked.

Cincinnati: Demand poor; trend steady; supply adequate; $56@56.50.

Buffalo: Demand and supply fair; trend uncertain; $59, bulk, Boston.

Kansas City: Around $46 bulk, Kansas City, and $50@51, sacked, Kansas City, for white or yellow.

Seattle: Demand fair; trend steady; supply good; $67 ton, delivered, carlots, sacked.

Boston: Demand cautious; supply ample; spot $62.50, April $64.

LINSEED OIL MEAL

Portland: Demand good; supply ample; trend unchanged; $75, f.o.b. Los Angeles.

New Orleans: Demand good to fair; trend steady; supply ample; 32% or better $84@86.

Ft. Worth: Demand quiet; supply sufficient; carlots, 36% expeller $85.82, prompt or March shipment, delivered Ft. Worth; pellets $2.50 premium.

San Francisco: Demand and supply fair; $86.

Los Angeles: Demand good; trend steady; supply scarce; $77@78.

Philadelphia: Demand and supply fair; 34% $85.

Chicago: Following soybean oil meal, linseed oil meal strengthened during the week ending March 9, although demand remained fairly slow. Quotations March 9: solvent $74@74.50, expeller $80.50.

Minneapolis: The market is sluggish, with demand lagging and prices off about 50¢@$1 ton. Quotations: 36% $62.50@63.50; 22% flaxseed screenings oil feed $44, bulk, Minneapolis.

Louisville: Demand fair; trend easy; supply ample; new process $79.85, old process $85.85.

Omaha: Demand fair; trend improving; supply ample; 32% expeller $82, pellets $84.50; 34% solvent $76.50, pellets $79.

Wichita: Demand fair; supply sufficient; 34% $88.

Indianapolis: Demand spotty; trend downward; supply sufficient; new process $82, old process $83.

Cincinnati: Demand and supply fair; trend easy; $79.75@84.75.

Kansas City: Trend lower with demand moderate and offerings fair; $62@63, bulk, Minneapolis.

Seattle: Demand steady; trend firm; supply limited; 34% expeller process $98 ton, delivered, carlots; domestic 29% expeller process $93 ton, ex-dock.

Boston: Demand slow; supply adequate; bulk $79.96.

MILLET

St. Louis: Demand fair; supply ample; recleaned Early Fortune $4.25 cwt., sacked; recleaned White Proso $4.75@5.25 cwt., sacked.

MALT SPROUTS

Boston: Demand and supply light; $64.

Cincinnati: Demand fair; trend steady to easy; supply adequate; No. 1 $52.

Chicago: Demand slow; supply good; No. 1 $45@46.

St. Louis: Demand good; supply adequate; No. 1 bulk $45.50@46 ton; No. 1 sacked $51 ton; No. 2 sacked $43.50@44 ton.

New Orleans: Demand slow; trend easier; supply adequate; No. 1 $50@55.

MEAT SCRAPS

Omaha: Demand fair; supply ample; $85.

San Francisco: Demand good; supply ample; $2.05 a unit of protein.

Los Angeles: Demand good; trend steady; supply ample; $2.05 a unit of protein, local; $2 a unit of protein, Texas.

Ft. Worth: Demand fair; supply sufficient; meat and bone, 50% $82@86, sacked, f.o.b. or delivered Ft. Worth.

New Orleans: Demand fair; trend steady; supply adequate; 50% $82@87.

New York: Demand steady to good; trend firm; supply sufficient; 50% $75, 55% $82.50, bulk; 50% $77.50, 55% $85, sacked.

Portland: Demand slow; supply ample; trend unchanged; $2.10.

St. Louis: Demand fair; supply ample; 50% $77.50 ton bulk, $81.50 in paper bags, $82.50 in burlap bags.

Chicago: Demand fair; supply ample; 50% protein $80@82; 55% $92.

Wichita: Demand good; supply inadequate; 50% $87.50, f.o.b. plant; 55%, no quotations, no offerings.

Cincinnati: Demand fair; trend easy; supply adequate; 50% $77@80 ton, sacked, f.o.b. Cincinnati.

Buffalo: Demand slow; trend steady to lower; supply ample; 50% meat scraps $75 ton, bulk; $78, sacked.

Kansas City: 50% meat and bone scraps $80@85, sacked, Kansas City.

Seattle: Demand fair; trend steady; supply sufficient; $2.05 a unit protein, ex-warehouse, truck lots.

Boston: Demand fair; supply good; $1.30 a protein unit; converted 50% $77.50.

Louisville: Demand dull; trend weak; supply ample; $80@85 ton.

St. Paul: Market easier; demand fair; supply ample; 50% meat and bone scraps $88.

MILLFEED

Minneapolis: Bran and middlings held about steady, with demand about equal to offerings. Heavier feeds moved up moderately. Quotations: bran $44.50@45.50, standard midds. $45.50@46.50, flour midds. $50@51, red dog $52@53.

Kansas City: Trend slightly lower on bran and shorts but a wider spread between the two continues; shorts have had a fair advance but show signs of weakness; $41.75@42.25, sacked, Kansas City, for bran and $46.75@47.25, sacked, Kansas City, for shorts.

Ft. Worth: Demand fair; supply moderate; carlots, prompt, wheat bran $51@51.50, gray shorts $55@55.50, delivered TCP; unchanged on bran and about $1.50 higher on shorts, compared with a week previous.

Wichita: Demand good; supply about offsets demand; basis Kansas City, March 8: bran $41.75@42.25, shorts $47.75@48.25; bran was unchanged to 25¢ ton lower, while shorts advanced $2.25 ton, compared with the preceding week.

Omaha: Demand fair; supply ample; bran $40.75, shorts $47.50; bulk, standard midds. $44.50.

Chicago: Millfeeds met a slow demand during the week ending March 9, and gave ground. Losses ran to 50¢ to $1 ton. Supplies were not pressing, however. Quotations March 9: bran $47.50, standard midds. $49, flour midds. $52@53, red dog $55@57.

St. Louis: Weakness in shorts due to warehouse offerings; bran barely steady; mixed feed business fair; bran $46@46.50, shorts $51@51.50, St. Louis switching limits.

Cincinnati: Demand fair; trend steady

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to easy; supply adequate; bran $52.50, middlings $53@54.

Indianapolis: Demand fair; trend unsettled to lower; supply sufficient; soft winter wheat bran $56.50, standard midds. $58, mixed feed $57, gray shorts $59.50.

Louisville: Demand fair; trend easy; supply ample; bran $61.66, mixed feed $54.66, shorts $56.66, standard midds. $55.55.

Buffalo: Bran was off $1 a ton last week; middlings held steady and heavy feeds were steady to 50¢ lower. Buffalo prices, on a Boston basis, were competitive with other U.S. points and Canada. Quotations March 9: bran $51.50@52.75, standard midds. $53@53.50, flour midds. $55@56.50, red dog $56@58.

New York: Demand slow; trend unsteady; supply sufficient; most buying of millfeed confined to early replacement. Cautious buying attitude intensified by talk of CCC feed wheat possibility; bran $58@59.50, standard midds. $60@60.50.

Boston: Demand spotty; supply improved; domestic standard bran $58.50; middlings $59.50; Canadian bran $59.50; middlings $60.50.

Philadelphia: Demand spotty; supply ample; bran $59, standard midds. $60.50, red dog $63.50.

New Orleans: Demand quiet; trend firm; supply adequate; bran $51.50@52.25, shorts $57.50@58.25.

Memphis: Demand moderate; trend lower; supply ample; wheat bran $49.50, gray shorts $55.50, standard midds. $54.50.

Seattle: Demand slow; trend easy; supply good; $45 ton, delivered, common transit points, carlots.

Portland: Demand slow; supply ample; trend unchanged; $44.

Los Angeles: Demand slow; trend steady; supply ample; mill run, Utah-Idaho billing, sacked $52@52.50; red bran, delivered CCP, sacked $57.50@58.

Ogden: Supply average; Utah and Idaho: red bran and mill run $43, middlings $48; to Denver: red bran and mill run $50, middlings $55; to California: red bran and mill run $50.50, middlings $55.50, f.o.b. San Francisco and Los Angeles.

San Francisco: Demand and supply fair; $51@59.

MINERAL FEED

Seattle: Demand steady; supply ample; trend unchanged; high phosphorus mixtures $65 ton; competitive brands $44 ton.

Wichita: Demand good; supply insufficient; all-purpose with iodine, 50-lb. blocks $95, 100-lb. bags $90, f.o.b. plant.

Omaha: Demand strong; supply tight; $85 sacked, $100 blocks.

Portland: Demand good; supply ample; trend unchanged; $42.

Sioux City: 50-lb. mineral blocks, 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

New Orleans: Demand good; trend steady; supply adequate; all-purpose granules $85@86, blocks $92.50@95.

Ft. Worth: Demand fair; supply ample; all-purpose granules $85, block $95; mineral phosphorus 6%, granules $98, block $103; cattle-sheep mineral, 7% phosphorus, granules $96, block $104; hog mineral, phosphorus 3½%, granules $80; phosphorus 2% $50 (all in 50-lb. paper bags).

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

MOLASSES

Boston: Demand good; supply adequate; 12¼¢ gal. in tank cars.

New York: Demand steady; trend firm; supply adequate; blackstrap 12¢ gal. in tank cars, tank wagons, f.o.b. New York, Philadelphia and Baltimore for March delivery; orders for delivery in April, May and June quoted 12¼¢ gal.

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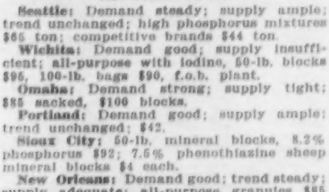

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Beaumont, Texas: Demand good; trend steady; supply sufficient; blackstrap 11¢ gal., tank cars and tank wagons, f.o.b. Beaumont.

Memphis: Demand moderate; supply adequate; trend steady; blackstrap 10½¢ gal., tank car, f.o.b. New Orleans.

Seattle: Demand steady; supply good; trend unchanged; $19 ton, f.o.b. Seattle, tank car lots.

Louisville: Demand dull; trend steady; supply ample; 10½¢ gal. in tank car lots, f.o.b. Gulf ports.

Atlanta: Citrus molasses—demand good; supply limited; trend strong; $15 ton, f.o.b. Florida producing points, immediate.

Minneapolis: Market steady at 10½¢ gal., f.o.b. New Orleans; $19 ton, West Coast.

Kansas City: Market steadier with prices unchanged; 10½¢ gal., New Orleans, for March; 10⅝@11¢ gal. for April-May-June; $19 ton West Coast.

Buffalo: Demand and supply good; trend upward; 13¢ gal., f.o.b. Albany.

Cincinnati: Demand fair; trend steady; supply adequate; 10@10½¢ gal., New Orleans.

Indianapolis: Demand fair; trend steady; supply ample; 9⅛@10¢ gal., tank car lots, f.o.b. Gulf ports.

Portland: Demand good; supply ample; trend unchanged; $19.

New Orleans: Demand fair; trend firm; supply adequate; 10½¢ gal. in tank cars, f.o.b. New Orleans.

Ft. Worth: Demand fair; supply ample; blackstrap 11¢ gal., f.o.b. Houston, cariots, delivered Ft. Worth; cars and/or trucks $26.45, seller's market price on date of shipment; maximum 11⅝¢, April through June.

San Francisco: Demand and supply good; $19 ton, f.o.b. cars, Richmond, Cal.

Los Angeles: Demand good; trend steady; supply adequate; $19, f.o.b. tank cars; $19.25, f.o.b. tank trucks, both Los Angeles harbor.

NIACIN

New York: Trend steady; $9 kilo bulk, freight allowed to destination; $9.10 kilo, 10-kilo lot; $9.20 kilo, 5-kilo lot; $9.30 kilo, 1-kilo lot; f.o.b. New Jersey.

OAT PRODUCTS

Chicago: Demand slow; supply good; reground oat feed $15; fine ground feeding oatmeal $81; feeding rolled oats $92@94.

Memphis: Demand moderate; trend lower; supply ample; 3½% protein, reground oat feed $21.30.

Portland: Demand slow; supply ample; trend unchanged; rolled $68, ground $64, cleaned $68.

St. Louis: Demand fair; supply ample; reground oat feed $18 in 100-lb. burlap bags; pulverized white oats $50 ton, choice $51.

Minneapolis: Interest in rolled oats continued to move toward normal spring volume, with buying of other types more restricted. Quotations: feeding rolled oats $92@93, standard pulverized $48.50@51, feeding oatmeal $81@82, reground oat feed $15@16.

Louisville: Demand fair; trend steady; supply normal; reground $22.35, rolled oats $98.35, feeding oatmeal $90.35, pulverized white oats $54.35, crimped white oats $74.85.

Philadelphia: Demand dull to fair; supply light to fair; pulverized white oats $57.50; domestic oat feed $24, Canadian $26.50.

Los Angeles: Demand fair; trend steady; supply ample; white pulverized $72.

New Orleans: Demand good; trend unsettled; supply adequate; pulverized white oats $61@66.50; oats $59@60; mixed feed oats $56@56.

Indianapolis: Demand fair; trend steady to lower; supply normal; pulverized white oats $58, pulverized mixed oats $52, crimped white oats $75, feeding oatmeal $93.50, No. 2 white oats $1.15 bu., sacks extra.

Seattle: Demand steady; trend easy; supply good; feed oats $68 ton, ground oats $69 ton, rolled oats $71.50 ton, all ex-warehouse, l.c.l.

Boston: Demand cautious; supply ample; white pulverized $52, reground oat feed $22.50.

OYSTER SHELL

Boston: Demand and supply steady; in paper $21.44.

Seattle: Demand steady; supply good; trend unchanged; eastern $32 ton, western $28 ton, both ex-warehouse, l.c.l.

Portland: Demand unchanged; trend ample; western $29, eastern $34; granite and crystal grits, both $26.

New Orleans: Demand good; trend steady; supply ample; $13@15.25, local.

San Francisco: Demand fair; supply ample; local $13, eastern $24.

Los Angeles: Demand fair; trend steady; supply ample; local $18.50, eastern $25.

Louisville: Demand good; trend steady; supply normal; $19.39 ton.

PEANUT OIL MEAL

New Orleans: Demand fair; trend easier; supply adequate; 26% $57@57.50; 45% $85@87.

PEAT MOSS

Chicago: Demand good; supply scarce; $3.80@3.95 standard 7¾ cu. ft. bale.

Boston: Demand steady; supply adequate; cariots $2.65@2.75 bale; l.c.l. $2.85@3.10.

New Orleans: Demand good; trend steady; supply light; 150-lb. bales German moss $3.30@3.85.

San Francisco: Demand fair; supply ample; $3.15 bale.

Philadelphia: Demand good; supply light; $3.05, f.o.b. pier.

Los Angeles: Demand good; trend firm; supply limited; ex-dock, German, 1,000-bale lots $3.30, 100-bale lots $3.35.

POTASSIUM IODIDE, U.S.P.

St. Louis: Demand fair; supply adequate; 100% pure potassium iodide, U.S.P., 250-lb. average in drums $1.90, 100-lb. lots in fiber drums $1.92, 25-lb. lots in drums $1.95, 5-lb. bottles $2.11, 1-lb. bottles $2.32; potassium iodide calcium stearate mixture, 225-lb. lots in leverpak drums $1.81, 200-lb. fiber drums $1.81, 100-lb. lots in fiber drums $1.83.

New York: Trend steady; straight KI U.S.P. $2.15 lb.; 90% in calcium stearate mixture $2.06 lb.

RIBOFLAVIN

New York: Trend steady; feed grade (in feed supplements) 6¢ gm., freight allowed.

RICE BY-PRODUCTS

Los Angeles: Demand moderate; trend steady; supply light; Texas $51@53 by truck.

COTTONSEED OIL MEAL FUTURES

Closing prices of cottonseed oil meal (41% protein) on the Memphis Merchants Exchange in dollars per ton (bulk):

	Mar. 4	Mar. 7	Mar. 8	Mar. 9	Mar. 10
March	....@*57.30	....@ 57.00	$6.50@ 58.00	57.00@ 57.75	....@*57.00
May	57.00@ 58.00	56.50@ 57.00	56.25@ 57.50	56.25@ 57.50	56.50@ 56.75
July	57.10@ 57.50	56.75@ 57.00	56.50@ 56.75	56.60@ 56.70	56.60@ 57.25
October	57.00@ 58.50	56.50@ 58.00	57.00@ 58.00	57.00@ 58.50	57.00@ 58.50
December	57.00@ 58.50	57.00@ 58.00	57.50@ 58.00	57.00@ 58.50	57.00@ 58.50
January	57.00@ 58.50	57.00@ 58.00	57.50@ 58.00	57.00@ 58.50	57.00@ 58.50

*Sales.

SOYBEAN OIL MEAL FUTURES

Closing prices of soybean oil meal (basis Decatur, Ill.) on the Chicago Board of Trade and on the Memphis Merchants Exchange, in dollars per ton (bulk basis):

CHICAGO

	Mar. 4	Mar. 7	Mar. 8	Mar. 9	Mar. 10
March	62.10@ 62.25	62.80@ 63.00	....@ 63.00	....@ 63.10	63.10@ 63.35
May	61.35@ 61.50	60.85@ 61.00	61.00@ 61.10	62.00@ 62.05	62.00@ 61.90

MEMPHIS

	Mar. 4	Mar. 7	Mar. 8	Mar. 9	Mar. 10
March	60.90@ 61.30	61.00@ 62.00	60.75@ 61.75	61.25@ 62.25	61.00@ 61.75
May	59.25@ 60.00	59.00@ 59.75	59.00@ 59.75	59.50@ 60.50	60.00@ 61.00
July	58.00@ 59.50	57.00@ 59.25	57.50@ 59.00	57.50@ 59.50	59.00@ 59.75
August	57.00@ 59.50	56.50@ 58.50	56.50@ 58.00	57.00@ 58.75	57.75@ 58.75
September	55.00@ 56.50	55.00@ 56.75	55.00@ 56.50	55.00@ 57.25	55.50@ 57.00
October	54.00@ 55.10	53.75@ 54.75	54.00@ 54.75	54.00@ 55.00	54.50@ 55.25
December	54.00@ 55.10	54.00@ 54.75	54.00@ 54.50	54.00@ 55.00	54.50@ 55.25
January	54.00@ 55.10	54.00@ 54.75	54.00@ 54.50	54.00@ 55.00	54.25@ 55.25

Atlanta: Demand fair; trend weak; supply limited; bran $48.25, sacked, March.

Memphis: Demand poor; trend weaker; supply adequate; bran $35, sacked, f.o.b. Arkansas points.

Ft. Worth: Demand fair; supply increasing; cariots, rice bran $32@33, prompt or March, f.o.b. south Texas rice mills; hulls $3@4, f.o.b. mills.

New Orleans: Demand fair to good; trend steady; supply limited; bran $47@48; no quotations on hulls.

San Francisco: Demand good; supply fair; bran $52, polish $59.

SCREENINGS

Minneapolis: Screenings were a shade stronger as offerings were less plentiful, particularly country receipts. Quotations: country run $28@32, lights $10@15, mediums $15@20, heavies $30@40; Canadian $21, bulk, Duluth; Canadian ground $31, sacked, Duluth; flax screenings $32.

Chicago: Demand slow; supply fair; ground grain screenings $34@34.50; Canadian, bulk $28@28.50.

Buffalo: Demand and supply fair; trend steady; ground, sacked $34, New York; unground, bulk $27.25, New York.

New Orleans: Demand fair to good; trend easier; supply adequate; 3/64-in. grind $43.50@45.50.

Cincinnati: Demand fair; trend easier; supply adequate; Canadian $32@33; barley $26@28, bulk, delivered.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Chicago: $22, cariots.
Kansas City: $21.50@22, cariots.
St. Louis: $21.10@21.50, cariots.
Des Moines: $22.25@22.50, cariots.
Philadelphia: $21.25@21.50, cariots.
Minneapolis: $22.75, cariots.

SORGHUMS

Ft. Worth: Demand dull; supply sufficient; undertone easier; cariots, bulk, No. 2 yellow milo $2.60@2.65, delivered TCP.

Los Angeles: Demand fair; trend steady; supply ample; No. 2 milo, Arizona, 25¢ rate, prompt $2.87½; No. 2 milo, delivered CCP, prompt $3.

Cincinnati: Demand and supply fair; trend steady to easy; $2.95.

SOYBEAN OIL MEAL

Decatur: Demand fair; supply good; 44% bulk, unrestricted $64.

Portland: Demand slow; trend lower; supply ample; March $58.

Ft. Worth: Demand poor; supply sufficient; cariots, 44% $78@80, March; truckloads $73@74, delivered Ft. Worth.

Memphis: Demand fair; trend steady; supply good; prime 44% solvent $68, sacked, f.o.b. Memphis.

Cincinnati: Demand fair; trend steady to higher; supply adequate; $62@63, bulk, Decatur.

Minneapolis: Tightening of supplies because of plant shutdowns and reduced production at others firmed up the market although demand remained only fair. Quotations: $58@58.50, bulk, Decatur; April shipment $57.50.

Chicago: Soybean oil meal staged a rebound during the week ending March 9. Traders said that several processors have shut down their plants in the last several weeks, and this is beginning to have an effect on the available supply. A fair demand persisted. Quotations March 9: 44% protein, unrestricted $74.60@75.

Louisville: Demand dull; trend stronger; $74.81.

Atlanta: Demand fair; trend slightly stronger; supply ample; 44% $81.50, sacked, immediate.

New Orleans: Demand slow; trend weaker; supply ample; 44% $79.50@80.

Kansas City: Demand moderate; offerings satisfactory; trend about steady at $59.50@60, bulk, Decatur, for Kansas City and West; $63@63.50, bulk, Decatur, unrestricted.

Seattle: Demand fair; trend firm; supply sufficient; $91.50 ton, delivered carlots, sacked.

Boston: Demand improved; supply adequate; $61, f.o.b. Decatur.

Ogden: Supply average; $110@115.

Los Angeles: Demand moderate; trend steady; supply ample; $89.07@9.57, delivered CCP.

San Francisco: Demand fair; supply ample; $89.57.

Omaha: Demand fair; trend improving; supply ample; 44% $76.50, pellets $78; 41% $77.50.

Wichita: Demand fair; supply sufficient; 44% $77, f.o.b. Wichita.

Indianapolis: Demand fair; trend downward; supply ample; $76 ton.

Philadelphia: Demand fair; supply ample; $61, bulk, Decatur.

SUNFLOWER SEED

St. Louis: Demand fair; supply ample; large black $14.50 cwt.; large gray $15.50 cwt.; medium black $12.50 cwt.; medium gray $13.50 cwt.; small black $9 cwt.; small gray $10 cwt.

TANKAGE

Los Angeles: Demand fair; trend steady; supply ample; $1.90 a unit of protein.

Ft. Worth: Demand fair; supply adequate; 60% digester $35@100, f.o.b. Ft. Worth.

New Orleans: Demand slow; trend steady; supply adequate; 60% $98@100.

Omaha: Demand fair; supply ample; $87.50.

Chicago: Demand fair; supply ample; 60% protein $87@92.50.

St. Louis: Demand fair; supply ample; 60% $85 ton bulk, $89 in paper bags, $90 in burlap bags.

Wichita: Demand good; supply insufficient; 60% $95, f.o.b. plant.

Cincinnati: Demand fair; trend steady to easy; supply adequate; 60% digester $83.50@87.

Kansas City: 60% digester $35@90, sacked, Kansas City.

WHEAT GERM MEAL

Buffalo: Demand and supply fair; trend steady; commercial grade $67, sacked, f.o.b. Buffalo.

New Orleans: Demand fair; trend easier; supply adequate; $70@72.

MILLFEED FUTURES

The following is a comparison of settling prices at Kansas City for March 4 and 11:

Bran—	Mar. 4	Mar. 11
March	$42.10@ 42.50	$42.00@ 42.25
April	....@*43.00	....@ 42.25
May	40.20@ 41.20	40.10@ 40.25
June	38.75@ 39.90	38.50@ 39.25
July	37.00@ 38.50	37.25@ 38.25
August	37.00@ 38.00	37.25@ 38.25
Shorts—		
March	$....@*47.25	$....@ 46.35
April	47.45@ 47.70	46.75@ 47.00
May	47.50@ 47.60	46.60@ 46.90
June	46.50@ 48.00	46.00@ 47.00
July	43.50@ 45.00	42.50@ 44.50
August	43.00@ 44.50	42.50@ 44.50

*Sales.

Old Crop Soybean Meal Futures About Steady

MEMPHIS — Protein oil meal futures prices finished the week on a mixed note at the Memphis Board of Trade. A good increase in volume was noted, however.

In spite of persistent liquidation, old crop soybean oil meal months held virtually unchanged.

Trading was brisk early in the week, turning quiet on the final two days of the week. There was a sharp decrease in the open interest. A burst of selling in old crop months wiped out the premium March had held over the more deferred old crop months, but this was regained later in the week. A bit of spreading from March to May was noted.

Unrestricted soybean oil meal closings ranged from 75¢ ton lower for September to $1.40 ton higher for March. The Eastern Trunk Line soybean oil meal prices were $2 ton lower for July to $2 ton higher for nearby March. Optional soybean meal prices were unchanged for nearby March to $1.50 a ton lower for July. There were 700 tons sold, against no sales the previous week. Open interest was down five contracts.

The cottonseed oil meal closings ranged from unchanged for March to $1.75 ton lower for May. There was heavy liquidation of cottonseed oil meal and little new business.

CALIFORNIA MEETING CHANGE

SACRAMENTO, CAL.—The lower San Joaquin Valley feed dealers' meeting previously announced for March 15 has been postponed until March 29, the California Hay, Grain & Feed Dealers Assn. announces. The meeting will be held at the Sequoia Club, Tulare, with Rae Saltzman of J. D. Heiskell & Co. acting as program chairman.

FEED CONSUMPTION

(Continued from page 4)

ter of the season. This was 39,400 tons less than the first quarter of 1953-54. Disappearance of wheat millfeeds at 1,196,900 tons was about the same as a year earlier, while the output of gluten feed and meal at 260,500 tons was about 20,000 tons above the same period. With sharply reduced rice milling, supplies of rice millfeeds totaled 57,500 tons and were 41,900 tons below the previous year. Alfalfa meal shipments totaled 270,900 tons the first three months of the feeding season as against 290,600 the same months a year earlier. Stocks of alfalfa meal on January 1 were the largest of record and totaled 282,000 tons. Consumption of other feeds was at about last year's level.

Feedstuff prices at the beginning of this season averaged 6% above a year earlier. Prices advanced around 2% the first of November and have been relatively unchanged since that time, USDA said. During the same period the previous year, feedstuffs prices advanced 18%.

The index number of wholesale feedstuff prices was 222.2 on Feb. 15, 1955, compared with 239.7 a year ago. Price changes have not been uniform during the past year, USDA pointed out. With relatively plentiful supplies, soybean meal prices as of the middle of February averaged $13 per ton below a year earlier and linseed meal $3 below, while cottonseed meal prices were about the same as a year earlier. Wheat millfeeds averaged $3 to $4 per ton below a year ago, while hominy and gluten feed averaged $2 to $3 lower. Tankage prices averaged $14 below a year ago and alfalfa meal $7 lower.

USDA noted that with relatively low egg prices, feeding ratios since last April had been well below average and the previous year. The butterfat-feed ratio also has been below average for almost a year.

Charles H. Johnson

Charles Johnson Named To O. A. Cooper Post

HUMBOLDT, NEB. — Charles H. Johnson, who recently announced his resignation as general sales manager of Crete (Neb.) Mills, has been named executive assistant to the president of the O. A. Cooper Co., Humboldt, Neb. The move, which was effective March 1, was announced by John R. Cooper, executive vice president of the Humboldt flour and feed milling firm. President is Guy L. Cooper, Jr.

Mr. Johnson was graduated from the University of California, joining Crete Mills shortly thereafter. In 1933 he became associated with the company sales department. In 1935, Mr. Johnson was named district sales manager for Crete Mills. He was elected to the company's board of directors in 1944 and was named general sales manager in 1948. When Crete Mills was acquired in 1953 by the Lauhoff Grain Co., Danville, Ill., Mr. Johnson continued in the post of general sales manager.

Mr. Johnson is at present a member of the board of directors of the American Feed Manufacturers Assn., a post he has held since 1949. He is also a director of the Nebraska Grain & Feed Dealers Assn., and the Nebraska Grain Improvement Assn. He served as chairman of the feed committee of the Nebraska Grain Organization in 1950-52, when the committee aided in the adoption of the revised feed law for the state. He was a former director and was second vice president in 1952 of the American Corn Millers Federation.

National Renderers Moves Chicago Office

CHICAGO—The National Renderers Assn. last week moved into its permanent quarters at 30 N. LaSalle St., Chicago 2, Ill. Its offices are in Suite 925, and the phone number is FRanklin 2-3289. The president of the association is John J. Hamel, Jr., and the secretary is Miss Jamie Fox.

St. Joseph Feed Club Will Meet March 15

ST. JOSEPH, MO.—Dr. William Hale of the animal husbandry department of Iowa State College, Ames, will lead a discussion on stilbestrol at the March meeting of the St. Joseph Feed, Seed, Grain and Fertilizer Club. The meeting will be held at 7:30 p.m. March 15 at the Livestock Exchange Bldg. Co-sponsors of the event are the Stockyards Co. and the St. Joseph Livestock Exchange.

Supplies for Feed—October-December, 1954, With Comparisons* (1,000 tons)

Commodity—	Oct.-Dec., 1953	Oct.-Dec., 1954	Oct., 1953-Sept., 1954	1954-55 Estimated
Oilseed cakes and meals—				
Soybean	1,390.2	1,388.9	4,964.9	6,000.0
Cottonseed	1,068.0	856.4	2,885.2	2,450.0
Linseed	131.8	142.0	526.5	550.0
Peanut	14.1	6.4	62.8	25.0
Copra	52.9	51.0	196.5	200.0
Total oilseed meals	2,657.0	2,444.7	8,635.9	9,225.0
Grain by-product feeds—				
Wheat millfeeds	1,197.4	1,196.9	4,668.7	4,700.0
Gluten feed and meal	240.6	260.5	929.4	925.0
Distillers dried grains	70.1	68.0	243.4	250.0
Brewers dried grains	53.3	48.5	227.9	225.0
Rice millfeeds	99.4	57.5	273.2	300.0
Total grain by-product feeds	1,660.8	1,631.4	6,343.0	6,400.0
Other feeds—				
Tankage and meat scraps	281.5	280.3	1,081.2	1,050.0
Fish meal	60.2	52.8	351.1	350.0
Alfalfa meal	290.6	270.9	1,128.3	1,150.0
Dried and molasses beet pulp	**	**	425.0	450.0
Total all feedstuffs	4,950.1	4,680.1	17,964.5	18,625.0

*Stocks and foreign trade statistics, when available, used in calculating supplies.
**Not available.

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COLORADO GRAIN, FEED CONVENTION

(Continued from page 6)

such as India, and the Pacific nations, Mr. Berger noted that it takes a long time to change the diet habits of a people, and many of our foodstuffs are unacceptable to these people.

Ton-Mile Tax

Carroll Bryan, state motor vehicle division supervisor, discussed the ton-mile tax recently imposed on highway carriers, which has been of major concern to Colorado voters through 1954-1955. Mr. Bryan warned that the ton-mile tax was inherently subject to modification before becoming an actual law. The Colorado legislature, in session simultaneously, completely rewrote the proposal during the convention and came up with a law much modified in favor of the truckers opposing the tax.

Colorado price support activities were discussed in a second forum by Allen Funk, price support specialist, and members of the Agricultural Stabilization and Conservation staff. The state's economy has held up well over the past year, Mr. Funk stressed, and there is no reason to expect any change during 1955.

Shortcuts in filing for railroad weight deficiency claims were discussed in a third forum, under L. B. Fitzgerald, Colorado Milling & Elevator Co. traffic department, chairman, with H. W. Steinmetz, of Western Weighing and Inspection Bureau; L. J. Grinnell of the Union Pacific, and Harry Duff of State Weights and Measures Department.

"New Livestock Nutrition" was discussed by Dr. Lloyd Washburn, head of the animal husbandry department of Colorado A&M College. Poultry nutrition was covered by Dr. Lynn Blalock, also of the Colorado A&M staff, with tips on better poultry care and feeding.

Merchandising Tips

Merchandising techniques were covered by F. Hugh Kelley, vice president of Ames (Iowa) Reliable Products Co. Closer follow-up on each individual customer, getting an understanding of his problems through devoting more time to him personally, and outside selling were suggested. Mr. Kelley cited the need for more aggressive promotion, and pointed out that most dealers are now carrying topnotch, accepted lines, and that the major difference in sales success will be strictly "service and personality which the customer can appreciate."

About 70% of the feed retailers don't sell feed intelligently, Mr. Kelley stated. Many feed firms have found that 10% of their dealers do about 75% of the business, with the remaining 90% of the dealers accounting for only 25% of the volume. He listed four characteristics common to successful dealers: A desire to serve their fellow men; a genuine liking for animals; emotional stability; and last, being a good collector. Mr. Kelley noted that a dealer who lets a bill run long past due not only loses a customer, but does his debtor a wrong.

Tom Wark, Wark Milling Co., Cortez, Colo., was elected president. Mr. Wark, who moved up from vice president, succeeds J. K. Malo, Intermountain Elevator Co., Denver. New vice president is Otis P. Sherrill, manager of the Ralston Purina Co., Denver. Members elected B. E. Barker, manager of the Mesa Flour Mills, Grand Junction, to the board of directors. Directors reelected were Del Ellis, Colorado Milling & Elevator Co., Denver; J. K. Malo, Intermountain Elevator Co., Denver; H. C. Harrison, Snell Grain Co., Arriba; M. C. Rodney, Rodney Elevator Co., Fort Morgan; and Otis Sherrill, Ralston Purina Co., Denver.

The final session led off with "How to Make a Profit" by James H. Burrell, president of James H. Burrell & Sons, Inc., of St. Louis. Mr. Burrell covered the pitfalls of poor cost accounting, ill-advised credit, too-high operating expense and competitive pricing in turn, with a warning that every chink in the profit structure must be adequately stopped up before the retail feed business will achieve the profit it expects.

The place to control credit, Mr. Burrell stated, is at the time it is extended. He urged retailers to have an exact understanding with the customer on how much credit was to be given and how it was to be repaid. He noted that many retailers are afraid to ask for their money. Mr. Burrell emphasized that "the credit buyer is working on your money, and there is nothing wrong with asking for your own money."

He pointed out that small improvements in operations often result in great savings over a year's time. He urged that feed men inspect their plants to see where they can do a job faster and cheaper and better.

Mr. Burrell warned manufacturers that the day of looking for a "dealer with $500 capital is over." Feed plants require high investments, and careful selection of dealer outlets is vital.

He cautioned against putting men in jobs they were unsuited for. He cited a firm that promoted 13 salesmen to vice presidents as a reward for doing good work. A few years later they fired seven of them. "That company ruined good salesmen by giving them jobs they weren't fitted for," Mr. Burrell said.

The management consultant stressed knowledge of costs. "A great many feed dealers don't know if they are making a profit or not because they don't keep a decent set of books," he said. "You must know what your inventory costs and your costs of doing business are," Mr. Burrell said, "or some morning you will wake up broke and wonder how it happened."

Operations of the Colorado Agriculture Department were outlined by a panel including Charles Mosier, director of markets; F. Herbert Gates, chief of the plant industry division, and Ray L. Burke, chief of animal industry offices.

The convention closed with a cocktail party and a dinner dance.

Dr. Joseph C. Blight

JOINS PETER HAND—Dr. Joseph C. Blight has been appointed division manager for the eastern states by Peter Hand Foundation of Chicago, according to Wiley Akins, vice president and general manager. Dr. Blight's thesis for his doctorate in biochemistry and nutrition received from Rutgers University was entitled "The Metabolic Relationship between the Vitamins and Amino Acids in Nutrition." At Beltsville, Md., Dr. Blight served for two years as animal nutritionist and biochemist for the U.S. Department of Agriculture, Bureau of Animal Industry. For the past three years, he has been products director and director of research at Dixie Mills Co., East St. Louis, Ill.

C. H. Garlow, Executive Of Stewart Co., Dies

PITTSBURGH — Charles H. Garlow, vice president and director of the Jesse C. Stewart Co., Pittsburgh, died March 6. He was 58 years old.

A graduate of the University of Pittsburgh, he became associated with the Stewart company in 1919 and held various positions, both with his firm and with several feed and grain associations. He was a member of the University Club of Pittsburgh.

Surviving are his widow, Mrs. Elizabeth Sloan Garlow; a daughter, Mrs. E. Paul Hoop, Jr., Pittsburgh; two sisters, Miss Sara K. Garlow and Mrs. William Reineer, both of Indiana, Pa., and three brothers, G. Jacob, Jeannette, Pa.; John L., Philadelphia, and Rev. James S. Garlow now on furlough from his missionary post in India.

BLACK DEATH?

EDMONTON, ALTA. — The Alberta Department of Agriculture announced that experimental cattle being fed asphalt were "not doing very well." L. C. Halmrast, provincial minister of agriculture, said the experiment was undertaken after a farmer threatened to sue the province. The farmer claimed that his cattle died after eating asphalt stockpiled for highway patching.

N. C. Feed Tonnage Shows Slight Dip

RALEIGH, N.C.—The North Carolina Department of Agriculture reports that the state's feed tonnage for January was 80,038. This compares with a total of 84,828 tons in January last year.

For the July-January period of the current 1954-55 fiscal year, the state feed tonnage is reported at 621,505. This compares with the total of 595,345 tons for thes ame period the previous year.

MARKETS

(Continued from page 2)

indications of improvement are eyed eagerly.

On the other hand, the slump in hog prices is an offsetting factor that has unpleasant implications insofar as sales of hog feeds are concerned. These have been most active of the formula feeds for some time in this area.

The over-all picture, however, appears considerably brighter with the beginning of spring activities on valley farms. Lower prices for some ingredients, combined with even a slight upturn in cattle, poultry and egg prices could mean a more realistic price ratio that would serve as an incentive for farmers to purchase more formula feeds. Naturally, manufacturers are hoping this will be the case.

Valley mills this week were mostly being operated on a 40-hour or less basis, with formula feed prices continuing their downward trend by 50@75¢ ton.

Central States

Mixed tendencies still were apparent in formula feed business in the central states during the week ending March 9, although several spokesmen indicated that the worst weeks are behind.

Mills were waiting for poultry starting feed to begin moving in seasonal volume, but it now appears that this type of busines will be

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two to four weeks behind this year. Hog feeds, too, are holding at low levels, reflecting the low hog markets. Pork at Chicago set a five-year low during the week.

Cattle feed and dog food are holding up well, observers say, and cattle should continue to demand formula feeds through April. Prices dipped somewhat early in the period but seemed to be making some recovery near the end of the week. Order backlogs are low, and several plants are not working five days a week.

Pacific Northwest

Formula feed activity remained quiet during the week, although the continued improvement in egg prices lent a more optimistic undertone to talk in feed circles. It is becoming apparent that the baby chick season, while later than usual, will be of better volume than had been anticipated earlier, and hatcheries are afraid of a late run of chick orders which they will not be able to fill.

At the moment, there is no demand for turkey poults at all, but if turkey raisers decide to reverse their present position, they may find it impossible to pick up poults. Turkey breeding hens are limited in number and are well through the laying season, so any demand at all for poults could tighten the market up considerably.

Protein prices held steady during the week, but definite signs of softness in the grain price structure were noted as interior elevators started soliciting the trade for orders for barley, oats, and in some cases for wheat. The storage problem promises to be more acute this year than it has ever been in the Pacific Northwest, and apparently elevator operators are finally beginning to think about making some room for the new crop grains which will be heading their way before too many more months have gone by.

Up to the present, for instance, barley at country points has been held firm at the loan level of about $47 ton f.o.b. shipping points, but some grain men indicated a willingness to shade this figure by a dollar or so, and there were indications of July-August barley at $42@43. This is confirming the viewpoint of feed men who have maintained for months that the price would have to come down, and no one is buying any more than nearby requirements at the moment, waiting for the market to shape up further. Cheaper grains, of course, would be a big help to the feed trade in this area, and would make for a more profitable year by improving feeding ratios.

A recent cold snap has caused an upturn in the demand for hay, but this will probably subside as the weather turns warmer. There has been no change in the price of hay. Formula feed prices were easy, perhaps $1@1.50 ton lower, and volume has not made the usual spring upturn.

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